DOCUMENT RESUME

ED 301 319 PS 017 618

AUTHOR Gottfredson, Gary D.
TITLE American Education--American Delinquency. Report No. 23.
INSTITUTION Center for Research on Elementary and Middle Schools, Baltimore, MD.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE May 88
GRANT OERI-G-86-90006
NOTE 70p.; Reprinted with permission from "Today's Delinquent," Volume 6, 1987.
PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Adolescents; *Delinquency; Educational Improvement; Elementary Secondary Education; Guidelines; High Risk Persons; *Intervention; *Learning; Preschool Education; *Prevention; Risk; *School Role

ABSTRACT

This paper describes what is known about delinquent behavior and the risk factors associated with engaging in delinquent behavior. Discussion focuses particularly on: (1) delinquent behavior and adolescent problem behavior; (2) high risk persons; (3) the role of learning in restraint against delinquency; (4) loci of intervention, including families, the justice system, and schools; (5) benefits and problems associated with preschool, elementary, middle, and secondary school intervention programs and school improvement programs; (6) guidelines for practice; and (7) opportunities to improve American education. Evaluations of approaches to delinquency prevention are reviewed, promising approaches are identified, and suggestions are made for applying early and continuing long-term educational and behavioral management programs to reduce delinquency. It is argued that approaches to reduce delinquent behavior should center on what young people learn, and that the school is the most promising locale for taking steps to reduce delinquent behavior. Over 100 references are listed. (RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED301319

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Center for Research On Elementary & Middle Schools

Report No. 23
May, 1988

AMERICAN EDUCATION—AMERICAN DELINQUENCY

Gary D. Gottfredson

PS 017618

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
John H. Hollifield
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

Center Staff

Edward L. McDill, Co-Director
James M. McPartland, Co-Director

Karl L. Alexander
Henry J. Becker
Barbara A. Bennett
Jomills H. Braddock II
Renee B. Castaneda
Barbara S. Colton
Russell L. Dawkins
Doris R. Entwisle
Joyce L. Epstein
Anna Marie Farnish
Denise C. Gottfredson
Gary D. Gottfredson
Edward J. Harsch
John H. Hollifield
Lois G. Hybl
Nancy L. Karweit
Melvin L. Kohn
Nancy A. Madden
Alejandro Portes
Robert E. Slavin
Carleton W. Sterling
Robert J. Stevens
Tammi J. Sweeney
Shi Chang Wu

Center Liaison

Rene Gonzalez, Office of Educational Research and Improvement

National Advisory Board

Patricia A. Bauch, Catholic University of America
Jere Brophy, Michigan State University
Jeanne S. Chall, Harvard University
James S. Coleman, University of Chicago
Edgar G. Epps, University of Chicago
Barbara Heyns, New York University
David W. Hornbeck, Maryland State Department of Education
Michael W. Kirst, Chair, Stanford University
Rebecca McAndrew, West Baltimore Middle School
Sharon P. Robinson, National Education Association

American Education -- American Delinquency

Grant No. OERI-G-86-90006

Gary D. Gottfredson

Report No. 23

May 1988

Published by the Center for Research on Elementary and Middle Schools, supported as a national research and development center by funds from the Office of Educational Research and Improvement, U.S. Department of Education. The opinions expressed in this publication do not necessarily reflect the position or policy of the OERI, and no official endorsement should be inferred.

Center for Research on Elementary and Middle Schools
The Johns Hopkins University
3505 North Charles Street
Baltimore MD 21218

Printed and assembled by:
VSP Industries
2440 West Belvedere Avenue
Baltimore MD 21215

© Copyright, 1987, National Center for Juvenile Justice, Pittsburgh, Pennsylvania. Reprinted with permission from *Today's Delinquent*, Volume 6, 1987.

The Center

The mission of the Center for Research on Elementary and Middle Schools is to produce useful knowledge about how elementary and middle schools can foster growth in students' learning and development, to develop and evaluate practical methods for improving the effectiveness of elementary and middle schools based on existing and new research findings, and to develop and evaluate specific strategies to help schools implement effective research-based school and classroom practices.

The Center conducts its research in three program areas: (1) Elementary Schools; (2) Middle Schools, and (3) School Improvement.

The Elementary School Program

This program works from a strong existing research base to develop, evaluate, and disseminate effective elementary school and classroom practices; synthesizes current knowledge; and analyzes survey and descriptive data to expand the knowledge base in effective elementary education.

The Middle School Program

This program's research links current knowledge about early adolescence as a stage of human development to school organization and classroom policies and practices for effective middle schools. The major task is to establish a research base to identify specific problem areas and promising practices in middle schools that will contribute to effective policy decisions and the development of effective school and classroom practices.

School Improvement Program

This program focuses on improving the organizational performance of schools in adopting and adapting innovations and developing school capacity for change.

This report, prepared by the School Improvement Program, describes the persistence and stability of delinquent behavior and the role of the school in trying to change this behavior.

Abstract

This paper describes what is known about delinquent behavior and the risk factors associated with engaging in delinquent behavior. It is argued that approaches to reduce delinquent behavior should center on what young people *learn*, and that the school is the most promising locale where steps might be taken to reduce delinquent behavior. Evaluations of approaches to delinquency prevention are reviewed, promising approaches are identified, and suggestions are made for applying early and continuing long-term educational and behavioral management programs to reduce delinquency.

TODAY'S DELINQUENT

Today's Delinquent, is published by the National Center for Juvenile Justice, the research division of the National Council of Juvenile and Family Court Judges; Hunter Hurst, Editor. Subscriptions and back issues still in print can be obtained by writing to NCJJ, 701 Forbes Avenue, Pittsburgh, Pennsylvania 15219.

Today's Delinquent, Volume 1: *Violence*, 1982. (Out of print.) Contributors:

Howard N. Snyder, "Violent Juvenile Crime: The Problem in Perspective."
John L. Hutzler, "Canon to the Left, Canon to the Right: Can the Juvenile Court Survive?"
Richard J. Gable, "Juvenile Delinquency Research: Truths, Myths and Hopes."
Hunter Hurst, "Issues for Resolution in the Eighties: Family Courts and Retribution."

Today's Delinquent, Vol. 2: *Serious Delinquency*, 1983. Contributors:

Richard J. Gable and Patricia C. McFall, "What to do About Serious Delinquency: Do Good? Do Bad? Do Nothing?"
Howard N. Snyder and Ellen H. Nimick, "City Delinquents and Thier Country Cousins: A description of Juvenile Delinquency in Metropolitan and Nonmetropolitan Areas."

Today's Delinquent, Vol 3: *Drugs*, 1984. Contributors:

Abraham Twerski, "Social Factors and Substance Abuse."
Ronald Akers, "Delinquent Behavior, Drugs, and Alcohol: What is the Relationship?"
Trivis Hirschi, "A Brief Commentary on Akers."
Thomas Sumansky, "Witches and Wizards: The Treatment of Adolescent Drug Abuse."

Today's Delinquent, Vol. 4: *Family*, 1985. Contributors:

LaMar T. Empey, "The Family and Delinquency."
Maurice B. Cohill, Jr., "The Family and Delinquency: ; A Judicial Perspective."
Judith Cassetty, "The Family and Delinquency: A Critique."
Leah S. Taylor, "The Family as an Adaptable and Enduring Social Unit: A Case for Assessing Delinquent Behavior from a Family Systems Perspective."

Today's Delinquent, Vol 5: *Parents*, 1986.

Laurence D. Steinberg, "Parents: Neglectful and Neglected."
David P. Farrington, "Parenting and Delinquency: Parent Training and Delinquency Prevention."
Arden E. Melzer, "From Behavioral Science to Social Policy: Look Before You Leap."

Today's Delinquent, Vol 6: *Schools*, 1987. Contributors:

Gary D. Gottfredson, "American Education - American Delinquency."
Denise C. Gottfredson, "Examining the Potential for Delinquency Prevention Through Alternative Education."
David P. Farrington, "Critique."

AMERICAN EDUCATION -- AMERICAN DELINQUENCY

When one compares the young men whose repeated misbehavior brings them before the court with young men who avoid this distinction, the former group is characterized on the average by less academic competence, more unsavory companions, unsalutary family backgrounds, greater tendency to seek excitement and behave impulsively, and more ready predispositions to reject conventional social rules. Moreover, the more delinquent adolescents are apt to dislike school, be troublesome in school, have limited career objectives, dislike their parents, drink, smoke, absent themselves from school, and use illegal drugs. Their siblings and parents often share some of these distinctions as well. This generalization holds, as far as can be determined, in communities of all types.[1]

Communities with especially high rates of crime and delinquency also tend to be distinguished by a familiar pattern of social characteristics: high proportions of female-headed households; high male unemployment rates; high proportions of marriages ended by divorce, separation, or abandonment; and high proportions of families with income from public assistance or welfare. In America, the schools in these communities tend to have mostly nonwhite students and high proportions of students who read behind grade level and who have repeated at least one year in school. These communities tend to be in urban areas.[2]

A decision maker (a judge, school official, probation worker, psychologist, or parent) confronted with a person who resembles the delinquent portrait would be helped by (a) an understanding of the causes of and potential remedies for the individual's misconduct, (b) information about which remedies are known to be

---

1 See West and Farrington (1975), Hirschi (1969), Hirschi and Hindelang (1977), Hindelang (1973), Gottfredson (1982), Jessor and Jessor (1977), and Loeber and Dishion (1983).

2 See Block (1979), Shaw and McKay (1969), and Gottfredson and D. C. Gottfredson (1985).

effective and which are known to be ineffective, and (c) what steps might be taken to reduce the number of such individuals about whom a decision must be made. In short, theory, knowledge of the effects of alternative treatments, and wisdom about prevention are useful. All citizens should also be concerned with ways to cope with disorganized communities and schools with high rates of delinquency.

I will describe some of what is known about delinquent behavior and some factors associated with elevated risk of frequently engaging in such conduct. I will suggest some implications of these risk factors for actions that might be taken to reduce delinquent behavior. I will argue that approaches centering on what young people *learn* are likely to be most fruitful. And I will argue that of the possible places steps might be taken to reduce delinquent behavior -- family, justice system, schools -- the school is the most promising. I will tell you why this is so, what has been tried and may work, and what has been tried and seems not to work. Last, I will speculate on what might be done to improve American education in ways that may be beneficial in restraining American youths from misconduct.

Delinquent Behavior, Adolescent Problem Behavior

The prevalence and incidence of adolescent antisocial behavior of various forms is astonishingly high. For example, in a survey of junior and senior high school students I recently completed, 13% of boys admitted damaging or destroying school property at least once in the past year, 19% admitted carrying a concealed weapon, 50% admitted hitting or threatening to hit another student, 6% admitted using force or strong arm methods to rob, and 19% admitted stealing or trying to steal something worth more than $50. Although the rates for girls are much lower than for boys for most types of delinquent behavior, they are not trivial. For example, in the same survey of junior and senior high school students,

6% of the girls admitted damaging or destroying school property in the past year, and 32% admitted hitting or threatening to hit another student.[3]

A small proportion of youths account for a large proportion of delinquent behavior. Marvin Wolfgang and his colleagues noted that about half the crimes committed by young people are committed by about 6% of them.[4] Furthermore, youths who engage in high rates of one type of misconduct are not usually specialists: They tend to engage in a variety of different kinds of antisocial behavior. A young person who steals often also fights with others at school and in the home, drinks or takes illegal drugs, defies teacher and parental authority, and destroys property. Therefore, for some purposes it is useful to think about a general pattern (or syndrome) called *adolescent problem behavior*. When antisocial behavior results in the impairment of functioning in home or at school or is regarded as unmanageable by parents or teachers, psychologists sometimes describe this pattern of behavior that is outside of the range of normal functioning as *conduct disorder*. This designation may apply to between 4% and 10% of all children. This pattern of behavior is displayed by a large fraction of youths who come before the courts and by about a third to a half of all child and adolescent clinic referrals.[5]

Adolescent problem behavior (delinquency, antisocial behavior) tends to be stable over time. That is, children who display troublesome behavior early in their school career are likely to continue to display problem behavior as adolescents, and as adults they are more likely than others to engage in criminal behavior, become alcoholics, and have poor work and family adjustment. Although the *amount* of delinquent behavior displayed rises sharply in adolescence and drops off sharply after adolescence, people tend to retain their rank order when com-

---

3 Gottfredson, D. C. Gottfredson, and Cook (1983).

4 See Wolfgang, Figlio, and Selin (1972) and Shannon (1982).

5 Kazdin (1987) described conduct disorder in the context of a review of treatment research and provided the estimates of prevalence.

pared to age-mates in the amount of such behavior they display.[6]

A further distinguishing feature of adolescent problem behavior is the dearth of demonstrably effective interventions that dependably reduce it. Although there are interventions that reduce specific kinds of problem behavior, too often reports of successful programs turn out on careful scrutiny to be exaggerated, flawed, or simply not supported by the evidence. This is not to say that there is no evidence that implies that certain specific approaches are promising or that we have no useful guidance on what to do. But it is an important feature of the problem of delinquent behavior that it is not readily altered by easily applied remedies.[7]

Who Is at Risk?

The exploration of ways to cope with antisocial adolescent behavior can profitably begin with an assessment of those factors associated with a high risk of delinquency. Such an assessment helps to describe the problem, provide insight about the kinds of interventions or social changes that might be productive, and suggest where and when those interventions might most effectively be applied. Evidence about the predictors of individual delinquent behavior reviewed in this section implies that educational or school-based interventions may be useful.

---

6 On stability in adolescence see Gottfredson, D. C. Gottfredson, and Cook (1983); Bachman, O'Malley, and Johnston (1968); Olweus (1979); Loeber (1982), and Loeber and Dishion (1983). On stability through adulthood see Robins (1966, 1978) and Huesmann, Eron, Lefkowitz, and Walder (1984). On age and amount of delinquent behavior see Hirschi and M. Gottfredson (1983), and Loeber (1982).

7 For reviews of intervention research see Dixon and Wright (1974), Sechrest, White, and Brown (1979), Martin, Sechrest, and Redner (1981), and Kazdin (1987).

Much evidence shows that it is not only *individuals* who differ in their risk for delinquent behavior, but that communities and schools also differ in the levels of delinquent behavior they experience. Accordingly, an assessment of the factors differentiating among communities and schools is also useful. In this section I also review some of these factors to show that many of them also suggest educational approaches to reducing delinquent behavior.

Individual Risk Factors

Family. Differences in family background, detectable even at birth, influence the child's risk of later problem behavior. Parental alcoholism is associated with higher rates of childhood conduct problems, adolescent substance abuse, truancy, dropout, and criminal behavior among offspring.[8] The reasons for this linkage are not clear, but they may involve prenatal exposure to alcohol due to mothers' drinking, genetic predispositions, family disruption related to alcoholism, lack of family supervision, or other causes. A large number of children in the family; family criminal history; very strict, harsh, or erratic parental discipline; and parental conflict are all associated with increased risk of delinquent behavior.[9] Again, the reasons for this linkage are not clear, but they may relate to frustrated responses to child conduct, cross-generational transmission of a predisposition to irritable aggression, the ineffectiveness of harsh or erratic discipline, limited attachment between parents and children, or other causes. In a study of Hawaiian children, family instability, low maternal education, congenital defects, high activity level in infancy, and a low Vineland Social Quotient at age two were found to be predictors of boys' official delinquency records by age 18.[10]

---

8 West and Prinz (1987), Robins, West, Ratcliff, & Herjanic (1978).

9 Glueck and Glueck (1950), McCord, McCord, and Zola (1959), West and Farrington (1975), Huesmann et al. (1984).

10 Werner (1987).

These risk factors, all of which could presumably be assessed early in a child's life, suggest that the family is an appropriate locus of intervention. Perhaps one could persuade parents to drink less and improve their own moral character. Perhaps one could induce them to like and supervise their children more attentively and to bear no more children than they have the time, patience, and resources to cope with. These seem worthy goals, and if they could be achieved the results would probably improve the lives of the parents as much as those of the children. But the obstacles are formidable. This approach requires those parents who are most incompetent in childrearing, who may not recognize deviance when it occurs, who have the least time and resources to manage their children, or who like their children the least to implement the program.[11]

Despite these obstacles, we have useful examples of effective interventions with families. Alexander and Parsons have reported an evaluation of a behavioral intervention with the families of status offenders that appears to have been effective.[12] And, in an impressive program of research -- based in part on observations that parents of aggressive boys use practices that promote aggressiveness and do not reward more socialized behavior -- Patterson and his colleagues have demonstrated the value of behavioral interventions in the family. These interventions specify rules for the child's conduct and structure rewards and punishments to increase desired behaviors and decrease undesired behaviors.

Patterson's intervention program is based on the observation that antisocial children display unremitting aversive behavior until parents acquiesce to the child's wishes. This acquiescence rewards the child for the aversive behavior and rewards the parent for giving in (because the aversive behavior stops). The boy learns to persist in aversive behavior and the parent learns that there are *short-term* benefits of giving in. The parental practices are ineffective because they

---

11 West and Farrington (1975) have suggested family planning programs. See also Hirschi (1983) on the prospect of reforming families.

12 Alexander and Parsons (1973).

result in high and persistent rates of problem behavior. The intervention program entails teaching parents to identify, describe, and watch for undesired behavior and to apply social learning principles to reduce it. As the parents become more competent, more important behavioral problems -- including problems outside the home -- can be addressed.[13] Observations of child behavior in the home and teacher observations in school demonstrate marked improvements in behavior, even for some time after the family intervention. But this form of family intervention appears most effective in the least disorganized families, is more effective with more comprehensive and longer-term intervention with parents, and makes heavy demands on parents. Its long-term efficacy in reducing problem behavior is relatively unstudied.

School. The first time most American children are systematically observed by persons outside the family is when they begin to attend school. When they enter school they must meet the demands of the classroom teacher. The teacher expects them to demonstrate self-restraint, be attentive to instruction, and socialize with others in a disciplined way. These are universal environmental demands. As Sheppard Kellam and his colleagues have noted,[14] teachers are *natural raters* who, because of their positions, are legitimized assessors of pupils' role performance. There is suggestive evidence that teacher assessments of adaptational status -- particularly aggression and shyness -- in the first grade predict certain kinds of adolescent problem behavior ten years later.[15] Classroom behavior ratings made by teachers in kindergarten, and in first through third grades have shown moderate correlations with police contacts by age 17. Specifically, teacher ratings of classroom disturbance, impatience, and disrespect or defiance are most predictive

---

13 See Patterson (1982, 1986), Reid and Patterson (1976), Fleischman & Szykula (1981), Baum & Forehand (1981), Kazdin (1985, 1987).

14 Kellam, Branch, Agrawal, and Ensminger (1975).

15 Kellam and Brown (1982).

of later delinquency.[16] But large-sample and dependable studies that allow the assessment of the relation between early (kindergarten or first grade) teacher observations and adolescent problem behavior are hard to find.

Easier to find are studies that show that teacher ratings of student adaptation at around age eight or older are predictive of delinquency years later.[17] There can be little doubt that poor school conduct as perceived by teachers at least from about grade three implies elevated risk of adolescent delinquent behavior.

Other indicators of poor adaptation in school are also associated with the risk of adolescent problem behavior. Scholastic aptitude test scores at age eight or nine,[18] but perhaps not at school entry,[19] predict official delinquency records in adolescence. Many studies involving a variety of samples and measures of delinquency converge in implying a moderate negative correlation between scholastic aptitude tests and delinquent behavior by junior high or high school age.[20]

One of the least disputed and most often replicated risk factors for delinquency is low school grades. For reasonably representative samples, the correlations between school grades and delinquency are usually moderately negative.[21] Limited educational attainment, special education assignment, being retained in grade, and poor attendance are additional indicators of poor adaptation to school

---

16 Spivack and Cianci (1987).

17 See Craig and Glick (1963), West and Farrington (1975), and Loeber and Dishion (1983).

18 West and Farrington (1975, p. 211).

19 Berrueta-Clement, Schweinhart, Barnett, Epstein, and Weikart (1984, p. 187)

20 See Gottfredson (1981, pp. 438-439) and Hirschi and Hindelang (1977).

21 Around -.2. See Gottfredson (1981) and Loeber and Dishion (1983).

that predict delinquent behavior.[22] Attitudinal and self-report measures of adaptation to school in adolescence are also associated with the risk of delinquent behavior. These include attachment to or liking for school, making an effort at school work, and reports of punishment in school.[23]

Adaptation in school is influenced by scholastic aptitude, behavioral dispositions such as impulsivity that are relatively independent of aptitude, and by social class and family background. This is apparent both from studies of students entering school in the early grades and studies of the subsequent educational achievements of adolescents.[24] Although scholastic aptitude tests are useful predictors of school grades and school persistence, they account for only a part of the variability in school grades and even less of the variability in measures of student conduct. Children bring individual differences developed in family environments to the elementary school that influence the way children are perceived by and responded to by teachers. Accordingly, a common goal of many preschool programs for disadvantaged children has been to prepare pupils for the behavioral expectations of early elementary school as well as to prepare them for the scholastic tasks they will face. Research implies that such preschool programs contribute to students' school competence independently of the effects such programs have on scholastic aptitude.[25]

---

22 On attainment see Bachman et al. (1978), on special education assignment see Berrueta-Clement et al. (1984), on grade retention see Spivack and Rapsher (1979), and on attendance see Robins and Hill (1966) and G. Gottfredson et al. (1983).

23 Hirschi (1969); Gottfredson et al. (1983).

24 Weikart, Epstein, Schweinhart, and Bond (1978, p. 113); Bachman et al. (1978); D. C. Gottfredson (1982); Lambert, Bower, and Hartsough (undated).

25 Lazar, Darlington, Murray, Royce, and Snipper (1982, pp. 38-39).

By adolescence, established patterns of poor school grades, truancy, limited effort on school work, disruptive behavior in school, disliking for school, little commitment to education, lack of belief in conventional social rules, and delinquent behavior have developed for some students. This pattern of adolescent problem behavior -- involving in-school as well as out-of-school components -- somehow evolves from the combination of initial behavioral dispositions, scholastic aptitudes, family environment and school experiences. Because it contains so many school-related elements, the school is an obvious place to look for remedies.

Peers. Delinquent adolescents usually have delinquent peers.[26] This tendency is so strong that it is difficult to be certain that association with delinquent peers is not itself just another form of adolescent problem behavior. Travis Hirschi has argued that delinquent peer association is simply a reflection of "birds of a feather" flocking together, and that delinquent peer association is one aspect of delinquency rather than a cause of it. Others believe that delinquent peer relations lead to delinquency. For example Ronald Akers and his colleagues have provided some evidence for a theoretical perspective on delinquency that implies that peers and others with whom a person is in association model and reward delinquent attitudes and behavior.

Despite the theoretical dispute about the causal status of delinquent peer associations, there can be no question but that such associations constitute a risk factor at least in an actuarial sense. Peer group interventions, often located in a school or school-like setting, have been among the most popular forms of treatment for delinquent boys. Examples include the Highfields Project, the Provo and Silverlake Experiments, and many school-based projects based on Guided-Group Interaction or similar strategies.[27] The idea underlying these programs is that peer groups encourage (or fail to discourage) delinquent behavior, and the norms of

---

26 Gottfredson (1982); Glueck and Glueck (1950).

27 Weeks (1958), Empey and Lubeck (1971), Empey and Erikson (1972), National School Resource Network (1980). Gottfredson (1987) reviewed these and related programs.

peer groups must be altered so that these groups no longer support antisocial behavior and instead encourage and reward prosocial behavior.

A problem with peer group approaches to reducing delinquent behavior is that if they intervene only with delinquent youths, groups necessarily are composed only of delinquent youths. Such peer group interventions may increase the solidarity of delinquent peer groups or increase the influence of delinquent peers on each other. This possibility is especially salient in institutional programs or programs for adjudicated delinquents in the community.

Because school populations contain a mix of students, only a fraction of whom are highly delinquent, it may be possible to structure school experiences or programs in ways that alter youths' friendship patterns. For example, schools can compose classrooms and study groups that mix different types of students together, or they can isolate troublesome youths or youths with academic difficulties from the mainstream.

School-Level Risk Factors

Schools with high rates of delinquency, victimization, and disruption tend to be urban schools with largely nonwhite student populations whose parents have themselves not gone very far in school; and these schools tend to have high proportions of students behind grade level in reading. There are some additional features we often observe in such schools when they are assessed by the Effective School Battery, a diagnostic school assessment used in school improvement efforts. In schools where students report often being victimized, students also tend to report being treated with disrespect by teachers, much association with delinquent peers, alienation, and high levels of punishment. Students tend not to believe in the validity of conventional rules or to like the school. In such schools, teachers report that students have little influence on how the school is run, that they have few positive interactions with students outside of the classroom, and that their classrooms are disorderly. In schools where teachers' reports of personal victimization are high, teachers also report that morale is low (they feel they

cannot count on others in the school to help with school improvement), they report little in the way of planning and action for school improvement, and that the school's administration is poor.[28]

This portrait of the disorderly school has important practical implications for the school as a locus for delinquency prevention and for increasing the safety, orderliness, and productivity of schools. Schools with the greatest problems of delinquency are often demoralized organizations. It can be very difficult to implement programs in demoralized schools, and this is a major obstacle with which interventions to reduce the risk of delinquency must cope if they are to have any prospect for success.[29] In high delinquency rate schools, it may be necessary to improve the schools as a whole.

The Role of Learning in Restraint Against Delinquency

Let me propose a perspective that integrates what we know about the individuals who engage in delinquent behavior at high rates.[30] This perspective involves

---

28 See Gottfredson (1985, pp. 52-56). For similar evidence in the context of a more analytical effort to account for differences among schools and evidence about the importance of the fairness and clarity of school rules, see Gottfredson and D. C. Gottfredson (1985).

29 See Gottfredson and D. C. Gottfredson (1987).

30 I am drawing on social learning theory (Bandura, 1977, 1982), speculations and evidence from the psychology of individual differences (Wilson and Herrnstein (1985), social control theory (Hirschi, 1969), coercive family process theory (Patterson, 1982), and the data about the stability of problem behavior (Huesmann et al., 1984) and the difficulty in ameliorating it (Kazdin, 1987).

several elements: (a) Individuals differ in impulsivity, daring, or future time perspective and in the facility with which they learn. (b) These are enduring individual differences; they are traits not states. (c) The interaction of these individual differences with patterned differences in the family, school, and peer environments people experience during their development result -- through learning -- in differences in the ability to behave competently in social environments. (d) This interaction also results in relatively stable differences in perceptions of the self and of the likely consequences of alternative actions, and these perceptions guide behavior. This perspective has implications for arranging learning experiences to reduce the risk of delinquent behavior.

Individual differences. There have been many false leads and much exaggeration in the history of the idea that persons who display high rates of criminal behavior are distinguished by their personal characteristics. Lombrosian ideas about atavistic characteristics and overdrawn accounts of the feeblemindedness of criminals have been rightly rejected, but in recent years the evidence about the link between scholastic aptitude or "intelligence" and crime has been inappropriately de-emphasized. Individuals show dependable differences on tests of scholastic aptitude, differences that have modest levels of stability from the preschool years to the school years, and high stability from the school years to adulthood.[31] Scores on these tests predict to a moderate degree indicators of academic competency -- school grades, later academic achievement, and educational attainment -- and they are correlated to a lesser degree with measures of delinquency. Scores on scholastic aptitude tests that have a large verbal component tend to be somewhat more correlated with measures of delinquent behavior than are scores on other kinds of aptitude tests, and verbally loaded tests are usually among the best indicators of what psychometricians often regard as "general intelligence." Such tests appear to be relatively robust predictors of performance in a variety of complex occupations.[32] One interpretation of this is that these tests measure relatively

---

31 Anastasi (1968); McCall, Appelbaum, and Hogarty (1973); McKay, Sinisterra, McKay, Gomez, and Lloreda (1978).

enduring differences among individuals in the facility with which they acquire competencies -- especially competencies in complex situations.

Individuals also appear to differ in impulsiveness or daring, and impulsiveness seems to be weakly to moderately associated with delinquency, scholastic ability, and poor school performance.[33] Research has also shown that differences in the tendency to adopt a future time perspective or delay gratification, is correlated with delinquent behavior.[34] Observations similar to this have led James Q. Wilson and Richard Herrnstein to build a theory of criminality around the notion that individual differences in the extent to which people discount the future consequences of their behavior account for part of the differences in their criminal behavior.

Impulsivity or a tendency to discount the future may be a stable trait. Scores on the Strong Vocational Interest Blank's Adventure scale provide relevant information. Respondents earn high scores on this scale by reporting that they like risky activities and occupations, and people tend to maintain their rank-order over time on these scales -- scores have high retest correlations over a period of three years. An interesting feature of these scores is that, unlike most other measures of vocational interests, they fall dramatically with age.[35] This drop in scores parallels the drop in amount of delinquent behavior with age after adolescence.

---

32 Schmidt and Hunter (1981).

33 Lefkowitz (1968), Roberts, Erikson, Riddle, and Bacon (1974), Kelley and Veldman (1964), West and Farrington (1975).

34 Jessor, Ceraves, Hanson, and Jessor (1968).

35 Hansen and Campbell (1985) report a decline of about one standard deviation between adolescence and adulthood for the Strong scores. Block (1971, p. 78) provides evidence of the stability of impulsivity from junior high school age to adulthood.

Learning. People must learn socialized behavior and self-restraint. When my three-year-old daughter was younger, she would grab apples from the supermarket display and immediately take a bite if left unwatched in the shopping cart. Today, she asks if she may have an apple; if the answer is yes, she declares, "We will take it to the counter and pay for it." I suspect she often ponders taking a bite, but consciously rejects that action. Most adults (clearly not all of them) do not even reflect on the idea of eating or pocketing the apple without paying for it. They have learned to pay for it first, and they have learned this pattern of behavior so well that the behavior is *unconsciously* executed. Socialized behavior in most aspects of day-to-day life is not reflected on; it is automatically displayed.

How did my daughter learn not to bite the apple in the grocery store? First, she had to have the cognitive capacity to recognize the pattern in the situation involved. (Biting an apple on the table at home is not the same as biting an apple plucked from the display in the store.) She also had to be punished by having the apple yanked away from her and being spoken to in a disapproving tone. She was repeatedly told that biting apples before paying for them is not expected. She had the behavior of presenting the apple to the clerk modeled for her in a conspicuous way.[36] She was also rewarded for showing the expected behavior by being praised and given a treat when she presented an item to a cashier. Finally, she had parents who could identify preferred and proscribed behavior and who cared enough to help her identify expected and unexpected behavior, who kept her under close surveillance, and who responded to her behavior with rewards and punishments when it occurred.

---

36 Hirschi (1983) wrote that he regards the social learning perspective on modeling as "not directly relevant to delinquency, or even as potentially misleading bits of advice" (p. 298). Modeling *alone* is insufficient to restrain impulsive behavior, and research suggests that parental permissiveness is more important in determining adolescent drug use than is parental drug use (e.g., McDermott, 1984). The importance of modeling, from the social learning perspective, is that it gives the learner the opportunity to observe the *desired* behavior and makes the behavior easier to acquire.

Environments. Learning to follow rules in a responsive environment leads to competency in the environment. Individual differences in the ability to learn from verbal cues, modeled behavior, and rewards and punishments undoubtedly determine the rate at which learning occurs. And, it is the *environment* that is the source of punishments, rewards, and signs of what is expected.

I like to think about *environments* as differing in competency. A competent environment gets conforming behavior from the people who inhabit it. It does this by signaling what behavior is desired and what behavior is not desired, by making arrangements to detect desired and undesired behavior when it occurs, and by responding to the behavior with rewards and punishments. It uses levels of observation sensitive enough to detect the behavior of concern, applies consequences that are effective in influencing the rate at which specific behaviors are displayed, and uses cognitive signals that are appropriate to the developmental stage and abilities of the environment's inhabitants. Classroom and school environments differ in the ways they manage student conduct and discipline -- some arrangements are more competent than others.

The outcomes of the interaction between people and the environments they experience are determined jointly by the individual differences the people bring to the environment and the differences among the environments they experience. Fundamentally, the task of educating and socializing children requires that the *environment* be arranged in ways that successfully produce the desired result.

My account of learning so far helps to explain why we observe correlations between conduct and measures of learning ability and impulsiveness on the one hand, and the efficacy of family interventions like Patterson's behavioral program on the other. It also helps to explain why the correlations of measures of ability and impulsiveness with delinquent behavior are not large. Traits interact with environments to produce learning and to regulate behavior.

Developed personal dispositions. The learning that occurs as a result of the interaction of a person with his or her environments produces more than just

changes in behavior in specific kinds of situations. It also determines perceptions of the self and generalizations about the likely consequences of one's actions. These perceptions and generalizations guide behavior, and once they are well established they influence behavior without conscious reflection most of the time. By adolescence, relatively stable individual differences in the content of self-perceptions and generalizations have usually developed, and it is possible to obtain reliable measures of self-perceptions using questionnaire items such as, "I do not mind stealing from someone -- that is just the kind of person I am," and it is possible to reliably measure generalizations using items such as, "Taking things from stores doesn't hurt anyone." Not surprisingly, scales composed of such items are positively correlated with delinquent behavior.[37] Because these perceptions and generalizations are "over learned" and habitually applied, they guide behavior without conscious reflection, and they resist change.

The boys whose repeated misconduct brings them before the court can now be understood as a group who, on the average, have *learned* that they do not like school or their parents and that following conventional rules does not yield rewards. They have usually failed to learn to behave competently in academic settings, and they have failed to learn to restrain themselves from misconduct in other settings. Put another way, the family, school, and peer group environments they have experienced have not developed in them restraints against their misconduct. In the language of Travis Hirschi's social control theory, they have not developed bonds to the social order. Furthermore, this group can be understood as occupying environments that are relatively incompetent in controlling their behavior.

Now we can see why problem behavior is a stable trait. Not only do stable individual differences in scholastic ability and proclivity to impulsive expression contribute to the stability of behavior, but because individuals experience the same or similar environments over long periods of time they are subject to the same or similar learning experiences. As a result they develop stable ways of per-

---

37 Gottfredson (1985).

ceiving themselves and their environments that lead to the display of similar behavior over long periods of time. Now, let us examine the implications for interventions to reduce the risk of problem behavior and the choice among loci of intervention.

Place of Intervention

There are three main places where intervention to ameliorate conduct problems might occur: families, the justice system, and schools. I will briefly examine each and conclude that the school is the most promising of these points of intervention.

Family

> Since parents number in the millions, work for nothing, are stuck with the job, and usually prefer law-abiding children, they are a potential resource we cannot afford to ignore. (Hirschi, 1983, p. 139)

Judge Maurice B. Cohill, Jr., ended his response to LaMar Empey's article on the family and delinquency in the 1985 volume of *Today's Delinquent* with the foregoing quotation, adding "I just don't believe we are able to 'reform' parents" (p. 53). This is, in essence, the main problem with the family as a locus of intervention. Although I described earlier some approaches to intervening with families to reduce childhood antisocial behavior, neither the contemporary political climate nor current knowledge about social policy options related to the family are conducive to the application of broad scale family interventions at present.

The family is the most important institution in the socialization of children, but for those children who are most at risk of adolescent problem behavior, the

schools seem in a better position to implement effective interventions than are families. I am moved to add, however, that I hear with discouraging regularity from school officials that they inherit the behavioral problems they encounter in the school from the home -- that there is little they can do to reform their trouble-making students unless parents instill in children a commitment to education. I hear this with regularity from school officials who have done little to harness the power of the family to apply rewards and punishments. If the families of young people who are troublesome are to be reached on anything like a large scale, it will be because the schools take the initiative to get parents' help while helping them control their children. The efficacy of behavioral programs that involve the family in rewarding and punishing school behavior has been repeatedly demonstrated experimentally,[38] but schools make little use of these methods.

The Justice System

It may be nearly impossible for the justice system to intervene to reduce the risk of adolescent problem behavior. The justice system is not in a position to punish misconduct in a timely fashion. The system also has difficulty in watching for desirable and undesirable behavior, but if this problem could be solved the essential problem would remain. To explain why the justice system will be ineffective, I must say a few words about effective punishment.

By manipulating environmental rewards and punishments it is possible to regulate behavior -- to train people -- if the environmental responses have certain characteristics. For example, we know that cueing, modeling, and clear descriptions of the expected behavior are useful.

Many members of the public have bizarre misconceptions about what behavior specialists mean by punishment. Punishment is an environmental event that reduces the behavior it follows. By punishment I do *not* mean painful electric

---

38 Atkeson and Forehand (1969)).

shock, long prison terms, cruel flogging or anything like that.[39] In the sense that I am using the word, punishment means the withdrawal of desired privileges, snacks, television, the use of a car, or the freedom to engage in a desired activity for *brief* periods of time. Effective punishment closely follows the behavior it is designed to reduce, and it should occur following the behavior a high proportion of the time. If Wilson and Herrnstein's notion that potential criminals are more likely than others to discount the future consequences of their behavior, this contemporaneous aspect of the environmental response is even more important.

The justice system uses punishment in entirely different ways. Some ways are self-defeating -- they remove potentially effective tools for reducing the risk of subsequent delinquent behavior. The justice system meets out punishment to "fit the crime" or to incapacitate feared people. It does this slowly and deliberately. If a young person is arrested for a crime, he or she may not be prosecuted. In the majority of cases a person is neither caught, prosecuted, nor convicted. In psychological terms, the punishment is not "contingent" on the behavior, and it is not frequent. The justice system's "punishment" does not match the psychologist's definition of punishment. It does not immediately follow the behavior. If anything at all is learned as a result of the punishment, it most likely is that punishment is unpredictable. In short, the requirement of due process and the philosophy of just deserts work against the effectiveness of punishment in the justice system.

A second feature of "punishments" applied in the justice system render them impotent as rehabilitative tools. Sentences or other sanctions are often applied for long periods of time so that it becomes difficult to use the withdrawal of freedom as an effective sanction. A characteristic of effective nonsevere punishment is that it is *brief* so that it can be frequently used as a response to behavior. For example, when a behavioral technique known as *time out* is used in changing behavior, a young person engaging in disruptive behavior may be sent to a room

---

39 Painful experiences do result in learning to avoid the behaviors that cause them. But the concept of punishment is much broader than painful punishment, as the text makes clear.

with nothing to do for a brief period of time -- as brief as five minutes. The "time out" is time out from positive reinforcement -- time out from the influences in the environment that have been supporting or encouraging the disruptive behavior. This time out is punishment. But when the time out is over, the person has a fresh start. He or she must be treated as if the incident were forgotten. This forgetting serves an essential purpose. It gives the young person something to lose by *subsequent* misconduct. Any time we structure a system so that a person has nothing to lose by misconduct or delinquent behavior, we weaken the restraints against that behavior.

Realistically, we had better place our bets for more effective prevention and treatment of delinquents elsewhere. It may be wise for the juvenile and family courts to attend to their original emphasis, and avoid the temptations of a "just deserts" approach.

Schools

Schools are the principal government-sponsored institution involved with the socialization of children. The public schools are the main mechanism through which American egalitarian ideals can be pursued, the route through which social mobility is made possible and the limits of socioeconomic origins overcome. Ironically, they are also the principal winnowers of the successful from the unsuccessful in an allegedly meritocratic system. To get ahead, a young person must learn and persist in school. Rightly or wrongly, the view that education not only is but also ought to be the way to get ahead is widespread. The Tocquevillian tension between the mobility-promoting and mobility-limiting functions of schools is mirrored in competing claims about the proper mission of American schools.

The divergent claims about the mission of schools are made in an educational context that has been with us only for the last twenty years or so. In the early part of this century, high school graduation rates were fewer than 10 per hundred eighteen-year-olds. At the start of this century, the American society still had much immigration by people of low socioeconomic status, and education was a

highway to upward mobility. By the 1960's high school graduation rates had come close to 80 per hundred, and secondary education now serves to sort out the losers rather than the winners.

In the 1960's, enthusiasm for the prospect of making education work to iron out disparities associated with race and social class in American society ran high. Our nation launched programs like Head Start and Follow Through with the aspiration that we could make education work better for everyone. Expectations that everyone complete high school had become well entrenched.

Now, sociologist Jackson Toby,[40] among others, argues that we can profitably do away with attendance laws that compel youngsters uninterested in education to remain in school, and that we should make federal grants to schools to hire security guards to keep predatory youths out of school. A similar view of the mission of schools was recently expressed by Assistant Secretary of Education Chester Finn[41] who wrote that the alarm about current levels of school dropout is excessive, and at any rate dropout may be beyond the schools' control:

> The symptom is not likely to be eradicated by school-based remedies. Insofar as it is a manifestation of linked social pathologies and inherited characteristics, it is more like "going on welfare" or "committing a crime" than like the commonplace problems of school effectiveness that are susceptible to alteration within the framework of education policy and practice: an ill-chosen reading curriculum, say. . . . Moreover, if the dropout problem is more accurately seen as a symptom of the "underclass" phenomenon than as an education issue, then school-based solutions are not apt to yield much more success than changes in the delivery-room protocols of obstetricians are likely to alter the incidence of out-of-wedlock pregnancy. (pp. 15-16).

---

40 Toby (1983).

41 Finn (1987).

Moreover, Finn sees current concerns about school non-completion as attempts to torpedo reforms calling for higher standards.

There is no point, according to this contemporary conservative position, in trying to educate youths who do not want or can not benefit from continued secondary education. These youths just spoil the schools for those young people who do want to learn. They drag down the quality of education for everyone by lowering teachers' expectations and the level of instruction, by disrupting the classroom, and by destroying the continuity of instruction through frequent absences. We need higher standards, it is said, not a watered-down curriculum that dilutes the quality of education for more able and interested students. Besides, school failure is not caused by problems with schools but by the defects (lack of ability, delinquency, and disinterest) of the failing students.

The contemporary conservative view is wrong not because it is false that troublesome youths disrupt the orderly process of education (they do), but because it is short-sighted. Education policy should have the same future-time perspective we wish more young delinquents had developed. Let me explain why we should be concerned with making the schools work well for more students.

First, Finn's argument that the current dropout rate (around 20% nationwide) is OK and perhaps as good as can be achieved de-emphasizes the vastly different completion rates for blacks and Hispanics than for white Americans. These rates are very different for inner city populations than they are for the rest of Americans. If an 80% completion rate is OK, then American education for Hispanics, blacks, and inner city youths is not OK, for completion rates for these groups are much lower.[42]

---

42 Dispute-free data about the extent of dropout are not to be found anywhere. The best single source is a report by Pallas (1986).

Second, the drop in the quantity of youth crime since 1975 reflected in such indicators as the Uniform Crime Reports is due mostly to a drop in the high-crime age population. Demographic projections are easy to make because the people who will be entering the high-crime ages in the next decade have already been born and counted. Population growth will be greatest among the inner-city, black, and Hispanic populations most at risk of adolescent problem behavior and school dropout. The quantity of youth crime will rise again.

The lack of concern about making schools work for adolescents who do not like school or do not do well it it neglects the troublesome fact that it is not just high school completion that is desired -- it is well socialized, productive, and non-criminal citizens. Who would be satisfied if high school graduation were universal, but the same proportion of youths who now drop out of school were equally delinquent, had the same attitudes about the validity of conventional social rules, and were equally lacking in the skills needed to do productive work? High school graduation is not the issue; it is the more general problem of which a graduation rate is merely one indicator that should be of concern.

There is already evidence that the contemporary conservative perspective on education is making its influence felt. The press for standards has led to more rigid criteria for promotion from grade to grade and to more emphasis on educational tests as indicators of quality. The result, in those school systems with which I am familiar, has been increases in grade retention rates -- sometimes accompanied by the *illusion* that increased standards are paying off in increased educational performance. This is an illusion, because most school systems employ a specific type of legerdemain that involves reporting test results by *grade level* not by age. Grade retention results in older students in each grade and the appearance of educational progress. Yet grade retention is a potent predictor of later dropout. Educational excellence should mean improving the delivery of education not fiddling with the figures. The future consequences of these short-sighted "reforms" are yet to be revealed in their full form, but the potential for

further increasing the risk for those students already at most risk appears great.[43]

Finally, the conservative perspective shares a fault with more liberal perspectives in focusing on the high school years when dropout actually occurs. Education systems (and dropout statistics) tend to focus attention on the problem of student academic incompetence when it becomes most painfully obvious. This diverts attention from signals earlier in educational careers that many students are not benefiting from education. Both liberals and conservatives recite statistics on the economic and labor market concomitants of a high school diploma. These statistics exaggerate the social and economic value of a diploma. It is true that those who graduate from high school earn more money than those who do not, but these differences are *much* smaller once one adjusts for the other characteristics of the school leaver.[44] It is not hard to see why. Imagine the difference in value to an employer of an academically incompetent delinquent individual with a poor attendance record, who is not bonded to the social order, and who does not believe in the validity of conventional social rules without a diploma and the same person with a diploma. We must be concerned that the person is incompetent in all these ways and about how things might have been done differently throughout the person's entire school career to ameliorate this constellation of problems.

The proper mission of the school, because of its standing as the major institution through which society attempts to tinker with the socialization of the young and because of large (if inadequate) public expenditures for education, is to do the best job possible of educating all students. It is sometimes said that too much is expected of the schools -- that demands that it provide appropriate services for high risk youths at the same time that it provides excellent education for the most able students sets too complex a task. In my view this is a denial of the mission of American education; the task is to educate the students the school gets, not just the ones the school wants to get. In this respect, the public schools have a much

---

43 See McDill, Natriello, and Pallas (1986).

44 Featherman and Hauser (1978, Table 5.25).

more difficult challenge than private and parochial schools. Because the challenge is difficult, we should not underestimate the resources, persistence, and open-minded problem solving that will be required to meet it.

In the following sections, I will review the record of accomplishment in developing school-based programs for youths at risk of adolescent problem behavior. It seems clear from this record that the quality of the scientific work performed by educational researchers is uneven. We should expect more of scientists than they have sometimes delivered. Nevertheless, some research is clear and compelling.

What Has Been Tried?

A broad range of school-based programs has been supposed to have potential for reducing the risk of adolescent problem behavior through one mechanism or another. Included are preschool programs for disadvantaged children, early elementary school programs to promote learning for disadvantaged populations, general attempts to improve instruction, behavioral and educational treatments within schools targeted at high-risk individuals, programs to make curricula more appropriate, diverse designs for alternative schools, peer-counseling programs, pull-out programs to provide special education services for disadvantaged students, special "high-relevance" law-related instruction, school-wide disciplinary programs, programs to improve school climate, organization development interventions in entire schools, classroom management programs, and programs that alter the organization of instruction in the classroom. I cannot review everything that has been tried or suggested, but I can offer an organizing framework on the various approaches to intervention, and I can assess a few examples of the various types to illustrate the range of possible benefits and harm that might be expected given present knowledge.

Programs can be classified according to whether they aim to serve youths identified as at risk or to reduce risk for an entire population. For example, preschool programs for the disadvantaged are targeted at a selected group of high-risk individuals and are aimed at increasing the individuals' adaptation to the demands of elementary school. Pull-out programs that remove high risk students from the classroom for special instruction have similar aims. In contrast, cooperative learning strategies for organizing classrooms for instruction so that all children benefit more from instruction target all students and focus on changing what is done in the classroom environment as a means to bring about beneficial outcomes for students.

In principle, a maximally effective program might be comprehensive in that it would combine environmental components that help everyone develop competencies with interventions specifically aimed at persons at greatest risk. A maximally effective program would cope with the known risk factors for adolescent problem behavior (including academic failure). And because problem behavior is a relatively enduring characteristic, a maximally effective program would be applied over students' entire educational careers -- not as a one-shot, short-term intervention. It should go without saying, but the record of accomplishment in this area requires that it be said, that what the program entails should be well specified and delivered as designed if it is to be maximally effective.

No program of which I am aware has approached these criteria for maximum effectiveness. Therefore, my partial review of what has been tried is a review of programs that are of limited scope compared with what might be done. The evaluations of these programs are also often limited.

I will begin by describing preschool programs for disadvantaged children and successor programs extending into the early elementary years. Then I will discuss research on the segregation of or mainstreaming of at-risk children. Last, I will describe programs in middle and secondary schools aimed at improving the school or the behavior of problem adolescents. Some of these programs may be helpful; some may not.

Preschool Programs

The War on Poverty, the legislation creating the Office of Economic Opportunity, and Title I of the Elementary and Secondary Education Act of 1965 generated a large compensatory education movement in the 1960's. These programs represented a large federal investment in improving education, and unlike most educational reforms they were accompanied by a sustained effort at evaluation. Some evaluation research has value in helping to understand the effects of the preschool programs begun during this era of enthusiasm.

Head Start programs were based on the notion that the first three to five years of life are critical to the development of intellectual and social skills, and that disadvantaged students in particular would benefit from developmental interventions during these preschool years.[45] There were differences of opinion among educational experts about the nature of interventions that would be appropriate for preschool children. Some experts, influenced by Piagetian perspectives on child development, favored allowing children to explore materials and develop concepts and categories on their own. Other experts developed highly structured, verbal, and sequenced instructional programs. Some programs were of a nursery school type; most included some form of interaction with the home as well as a school-like component.

The earliest evaluations of Head Start programs are now important mainly because they showed that the program was not implemented in a very intensive form. The most recent national evaluation of Head Start programs is more informative about the recent status of Head Start, and it provides a more favorable portrait of its effects.[46] Preschool programs usually produced modest short-term effects on cognitive test scores and tests of social development such as self-

---

45 See Natriello, McDill, and Pallas (1987) for a review of these programs, their rational, and evaluations.

46 McKay, Condelli, Ganson, Barrett, McConkey, and Plantz (1985).

esteem and social behavior, and they produced more lasting effects on health, psychomotor development, and nutritional status. The national evaluators speculated that improvements in Head Start -- including better standards for implementation, better training and technical assistance, and moving from summer to full-year programs -- had strengthened the program.

This recent evaluation paralleled other evaluations of compensatory education interventions in finding a *fade-out* effect. The differences in achievement gains shown by program and control children diminish over time so that after a year or two in school the differences are no longer detectable. This fade-out effect has so often been observed that it may be regarded as an expected feature of the effects of early educational interventions.

The national evaluation of Head Start provides one kind of accounting of the effects of this large program -- and perhaps the most helpful accounting from a national policy perspective. But the examination of specific preschool programs can provide a more fine-grained picture of the influence of the programs. These more fine-grained examinations are useful because it is often possible to examine more detailed information about specific student outcomes than is available for the entire national program.

Three specific reports are important either because of their special value in revealing the effects of preschool programs or because they have captured media and policy-maker attention. These are, in descending order of importance and ascending order of media attention, (a) the *Consortium Studies* involving the pooled and separate examination of several specific preschool programs that made their data available to a group of researchers, (b) the *Changed Lives* report on the long-term effects of the Perry Preschool Program, and (c) a *comparative study* of three different preschool programs. The first of these reports is most important because it provides a reasonably careful examination of the typical effects that can be expected from a preschool experience for disadvantaged children. The second has less scientific value, but it is important to discuss because of the attention it has received and because the authors have pressed the policy implications of their

study in a persuasive fashion. The third has little scientific value, but I will discuss it to alert you about some features of a study to attend to in making your evaluations and to illustrate an example of a small study in which authors and journal editors should have displayed more scientific circumspection and less speculation on policy than they did.

Consortium studies. Investigators who had independently designed and conducted eleven preschool programs for children in low-income families in the 1960's agreed to pool their data and conduct a joint follow-up study. This group, the consortium, cooperated with a group of scientists led by Irving Lazar and Richard Darlington to analyze and summarize the information about the effects of these preschool treatments not only on cognitive and school performance outcomes but also on students' educational and occupational expectations and parental expectations for their children.[47]

The eleven programs had a common objective of counteracting the effects of poverty on young children, especially the effects believed to derive from early experiences. Program designers hoped that early intervention would solve the *cumulative deficit* problem, the problem that lower socioeconomic status children not only begin school at an academic disadvantage but also that they lose ground over time. Some were "center-based" nursery school programs that differed in their structure and curriculum. Instruction took place at centers, and parents were visited and observed, but parents were usually not involved in the routine operation of the program. "Home-based" programs focused on a parent (usually the mother) as a way to influence the child's development. Activities were introduced into the home by an educator who trained the mother in the use of the activities. "Combined" programs used both of these strategies, combining a center-based nursery school and home visits.

---

47 Lazar et al. (1982).

Program participants were typically poor and black, lived in cities, and scored somewhat below average on scholastic aptitude tests. Programs served children between 3 months and 5 years of age. Some programs were implemented as experiments with children randomly or nearly randomly assigned to participate or not, and others employed other -- less dependable -- evaluation designs. The consortium researchers collected information about participant and comparison group members' school progress and scholastic achievement, and they traced and interviewed youths and parents to assess their attitudes years after participation in the programs ended. The consortium investigators examined the results of more nearly randomized design projects separately from those with less rigorous designs, and they employed methods to minimize the influence of extreme cases on their summary analyses.

The results showed that program students were less likely to be placed in special education classes and were less likely to be retained in grade than were comparison students. They showed that participants were less likely to be assigned to special education status even after statistically controlling for what may be the primary effect of the program -- scholastic aptitude measured at the of the intervention. Program participants were better able to meet the demands of the school than were comparison students, apparently even beyond the extent that might be explained by better scholastic achievement.

Program participants performed substantially better than comparison children on standardized achievement tests for math and reading, although the effects for reading may not be as dependable as those for math. The consortium researchers' results imply that the size of the difference between the treatment and comparison groups' performance in achievement narrowed over time from the third to the sixth grade, displaying the familiar fade-out effect; but the effects were detectable over several years. Similar results were obtained for "intelligence" test scores. The results did not show any difference between the treatment and comparison students on educational or occupational expectations, but they did imply that the mothers of the program participants were more satisfied with their children's performance and had higher aspirations for them.

The research did not produce any dependable evidence of the differential efficacy of the various programs or of the programs for different types of students. In short, the consortium study implies that these preschool programs had beneficial effects that were not evanescent but that did diminish over time. This seems to be a general finding in research on preschool interventions. Children do learn and benefit educationally from them, but the benefits detectable using educational tests diminish over time. It is quite possible that the grade retention and special education placement effects of the programs have important consequences.

Changed Lives. David Weikart and his colleagues have reported on a follow-up study of 58 youths who participated in the Perry Preschool and a nearly randomly equivalent group of 63 youths who did not participate.[48] All were black, low socioeconomic status children. At ages 3 and 4 these children entered either the preschool program or a control group that did not attend a preschool. Information about these youths was collected between ages 3 and 11, and at ages 14, 15, and 19. The investigators claim positive effects of the preschool intervention at age 19 on employment, high school graduation, and arrests, among other things. Weikart and his colleagues argued that these beneficial effects came about because the preschool program set in effect a chain of interactions between the students and their environments. They argued that the preschool alumni displayed more school competence and were less often assigned to special education or other unsalutary experiences. This resulted in their better academic performance and reduced delinquency in adolescence. Accompanying economic analyses make all this look like a terrific bargain.

The follow-up did produce promising results, but the claims made by the investigators seem excessive for several reasons. Let us examine this study in more detail. It was possible to obtain school records for 54 treatment and 58 control group students through grade 6. This is a reasonably high proportion of the students in both groups. For preschool group members, the researchers reported a smaller percentage of years spent in special education in grades K-6, a smaller

---

48 Berrueta-Clement et al. (1984).

percentage of children ever classified as mentally retarded, and more years receiving remedial educational services than for control group members. The researchers examined a large number of attitudes towards high school and reported differences favoring the treatment group on a few items. They reported that a larger proportion of treatment than control youths graduated from high school.

They also reported that a smaller proportion of treatment than control group members had ever been arrested or charged (as juveniles or adults). The proportions arrested as juveniles was not significantly different for the two groups, nor was the proportion arrested as adults significantly different by conventional statistical criteria. The lifetime prevalence rates (percentage ever arrested as either a juvenile or an adult) are difficult to interpret -- if not impossible. A footnote in the report discloses that a much smaller fraction of preschool than comparison group members consented to having their juvenile police and court records searched, and it is therefore not clear from the report how these prevalence rates (reported for the *entire* sample) were estimated. For the adult criminal history data, which were presumably available for the entire sample, there were no significant or remarkable differences in the number of convictions, proportion of persons convicted, or proportion of persons confined. There were differences (favoring the treatment group) on number of arrests. The general pattern of the data imply that there was a smaller number of high-rate offenders in the control group, and these high-rate offenders pulled the mean scores for this group up. Self-report frequency data for the two groups on 16 different offenses showed differences favoring the treatment group for three of the offenses; the three offenses all involved interpersonal aggression.

The sense one gets on reviewing the results reported on the Perry Preschool follow-up is that they are presented in a way that sheds the best possible light on the program. Criminologists and measurement experts do not all see eye-to-eye on the best way to present data on delinquent behavior and crime, and there are alternative ways to present such data. Different methods of scoring self-reported delinquency, for example, have different implications for the suitability and interpretation of statistical tests. It is not appropriate to go into the technical details

here, but in general terms the reliance on frequency data about crime usually increases the influence of a small number of individuals' reports on the means. What are called *variety scales*[49] are often less sensitive to extreme cases and could also have been scored to supplement the frequency scores reported. Probes for what statisticians call the "robustness" of the results would also have been useful, i.e., checks to see whether or not the statistical differences remain when extreme cases are excluded from the analyses. More complete tabulations, including standard deviations, would also have made the results more interpretable.

If we could have confidence in the lifetime prevalence data, it would be possible to conclude that a difference in proportions ever arrested this large or larger would occur by chance infrequently. But absent confidence in those data, and given the technical problems that a few high-rate offenders present in interpreting the frequency data for adult arrests and self-reports, it is difficult to have confidence in the outcome data for crime. Even if we could have confidence in these measures, the stability of antisocial and delinquent behavior is so high, the effect is seen so long after treatment, and so few other studies have found large effects even immediately after an educational intervention that a sober-minded scientist would insist on replication of the results before making policy recommendations.

In separate analyses, Weikart and his colleagues reported on an attempt to elucidate the process through which their preschool intervention may have reduced delinquency by using a procedure known as causal modeling. The results of the causal modeling exercise they present are obviously incorrect.[50] Furthermore, these causal models are deceptive in that they suggest to a nontechnically-

---

49 Hindelang, Hirschi, & Weis (1981).

50 Specifically, the percentages of variance explained cannot be correct given the path coefficients presented in their figures; and the model including more explanatory variables would have to alter the path coefficients for variables from model to model as well as the percentages of variance accounted for, contrary to the results presented.

oriented reader that there is a chain of events that preschool participation puts in motion that results in less delinquency and more employment by age 19. The data underlying the causal model[51] cannot be defensibly used to suggest this chain of events. The underlying data show essentially no correlation between preschool attendance and delinquency ("arrests") and therefore they do not suggest an effect of the program on delinquency. Furthermore, the correlation between preschool participation and arrests on which the analysis is based is so small (and it is non-significant) that it does not jibe with results presented elsewhere in the same report about the association between program participation and arrests.[52] Discrepancies of this kind undermine confidence in the remainder of the results as well.

The *Changed Lives* report contains a section making estimates of the economic benefits of the preschool program, taking into account such things as the reductions in the cost of crime that result from the preschool intervention. All things considered, economic projections of this kind are interesting but undependable. The projections are based on a single small study, a study requiring replication, and a study demanding great caution in interpretation.

---

51 Berrueta-Clement et al. (1984, p. 187).

52 The same sample appears to have been the subject of separate analyses by Farnworth, Schweinhart, and Berrueta-Clement (1985) using self-report delinquency data at age 15 as dependent variables. Three of four delinquency factors examined were not influenced by preschool participation according to the researchers' models. An "aggressiveness" factor was not influenced by preschool attendance according to the models, although it was the interpersonal aggression *items* for which Berrueta-Clement et al. (1984) reported significant differences in their age 19 self-reports. The only factor on which preschool attendance had a nominally "significant" effect was a dishonesty factor (including theft), whereas the age 19 self-reports showed no differences for a stealing subscale. The differences between the findings at age 15 and 19 contribute to a "now you see it, now you don't" impression that is not surprising in small sample research.

A comparison of three preschool programs. A recent report comparing three very small groups of children (18 persons) exposed to three different preschool experiences by Lawrence Schweinhart, David Weikart, and Mary Larner captured newspaper and educational newsletter readers' attention with article titles such as "Preschool Pressures, Later Delinquency Linked in Study." Although the authors of the study cautioned that their findings were based on one study with a small sample, they showed a remarkable lack of restraint in speculating in their article on the policy implications of their findings.[53]

Here is what the investigators say they found in their study of children who were nearly randomly assigned to three preschool treatment types (nursery school, a language-oriented educational program, and the High/Scope curriculum) and followed-up through age 15: (a) No significant difference in achievement test scores at ages 7 or 8 and no significant differences on a "competency" test total score at age 15. (b) No difference in self-reported police contacts or truancy. (c) A significant difference on a self-report delinquency scale using a frequency scoring formula -- the 18 persons in the language-oriented curriculum had a much higher mean on this scale than did the other two groups, although no test for the significance of the difference for specific comparison groups was reported. What accounts for these results? Most likely the presence of a small number (two to three) of high rate delinquents in the language-oriented curriculum group. The statistical test used by these investigators is sensitive to these extreme cases, and I judge it to have been inappropriate. It is good practice to examine several different ways of measuring outcomes.

This small-scale study is not a sound basis for concluding that the three curriculum types differ in their effects on delinquency. The conclusions are not even consistent with this group of investigators' previous conclusions about these three instructional programs. In an earlier report[54] the investigators downplayed the

---

53 Schweinhart, Weikart, and Larner (1986).

54 Weikart, Epstein, Schweinhart, and Bond (1978).

superiority of the language-oriented program in its effects on cognitive outcomes and wrote, "On the basis of these results, we have concluded that the principal issue in early childhood education is not *which* curriculum to use but how to manage *any* curriculum to achieve positive results" (p. 136). The results of this small and irresponsibly reported study, unless replicated in large sample research, are at present best regarded as a fluke.

Summary: Preschool programs. High quality preschool programs appear to help disadvantaged children prepare to meet the demands of school. For a time, they raise scholastic ability, although the effects fade with time. Preschool often reduces the assignment of students to special education and the retention of students in grade. Because special education assignment is costly and can be implemented in a harmful way, and because grade retention is costly and a good predictor of dropout, any intervention that has these effects is useful.

Perhaps one of the most important preschool intervention experiments seems to have been ignored in reviews of the literature by American scholars. This was a program combining nutritional, health care, and educational treatments for groups of chronically undernourished children from Colombian families of low socioeconomic status.[55] This research applied a high intensity treatment differing in duration and beginning at different times for different groups of children between 42 and 87 months of age. The quality of the research was high, and the results show that the longer the treatment and the earlier the treatment the greater the gain in academic ability scores. The most powerful intervention did not bring the low-socioeconomic-status, low-weight-and-height treatment group up to the average ability scores of the high socioeconomic status children in a comparison group, but it did bring the treated group's mean Stanford-Binet Intelligence test score at age 8 -- after a year of primary school -- up to only 5 months behind the theoretical normal score. Although the children studied were more disadvantaged than most children involved in U.S. compensatory education studies, the results suggest that the longer the duration of a well-planned and multimodal interven-

---

55 McKay et al. (1978).

tion, the greater the beneficial effect of the intervention.

Elementary School Programs

The observation that achievement gains made as a result of preschool programs for disadvantaged children fade with time implied that longer-term programs extending into the elementary school years may be needed to sustain gains. In the 1960's, the federal government began to sponsor a variety of such intervention efforts in the Follow Through program.

The most successful of the intervention types overall was almost surely a *direct instruction* method that, although not successful everywhere it was tried, usually had the most dependable beneficial effects on measures of basic academic skills as well as affective outcomes.[56] This approach, evolved from the language-oriented preschool programs applied earlier. It entails a highly structured approach, a fast instructional pace, a hierarchical arrangement of steps, frequent questioning and praise for correct answers, and drill and practice.[57] The program's authors sought to make the program "teacher proof" and so put demands on teachers to follow the planned lessons closely. These demands do not please all teachers, and the method requires the use of classroom aides. These appear to be its major limitations when compared to alternative programs involved in Follow Through.[58]

---

56 Stebbins, St.Pierre, Proper, Anderson, and Cerva (1977).

57 Bereiter and Engleman (1966); Becker and Carnine (1981).

58 The Stebbins et al. (1977) report was, naturally, not the last word on the relative effectiveness of the various Follow Through program models. The contentious literature on the topic is reviewed by Natriello et al. (1987), who provide the relevant citations.

A long-term follow-up study of students who had experienced direct instruction through three levels of the program (beginning in kindergarten or the first grade) -- and compared them with presumably similar students from another school -- traced outcomes for as many of the students as possible. Although this study suffers from a number of defects due to its non-experimental design and unreported attrition rates, the results imply much higher rates of high school graduation for students exposed to direct instruction.[59]

What of the High/Scope cognitively-oriented curriculum when applied in early elementary grades? It did not fare as well in the Follow-Through evaluations, usually coming out near the bottom of the list of programs. As Slavin put it, "What these findings imply is that the developmental/humanistic models *can* be effective, as evidenced by their apparent success in several sites, but the evidence for this or evidence of what is required to ensure their success [is] essentially lacking" (p. 28).[60]

Overall, the various evaluations of both preschool and elementary programs imply that structured, sequenced programs for disadvantaged children can reduce their disadvantage; that the effects of programs fade with time; that some increase in school competency may lead to long-term benefits; and that the longer the duration of a good intervention program, the greater the benefits.

Recent developments. Long-term assessments of the benefits of sound educational interventions are only available for the programs developed for the War on Poverty Head Start and Follow Through programs. But educational researchers have continued work to develop elementary school instructional methods that may be as effective or possibly more effective than those used in Follow Through. The best known and most widely used of these methods are some form of Benja-

---

59 Meyer (1984).

60 Slavin (1987b). Kennedy (1978) summarized the Follow Through evaluations.

min Bloom's *mastery learning* model[61] and *cooperative learning* methods on which Robert Slavin is the leading researcher-developer.[62]

Not all students learn at the same pace, and as a result classrooms are usually heterogeneous to some degree with respect to the level of instruction most beneficial to different students. Both mastery learning and cooperative learning are attempts to cope with this heterogeneity. Mastery learning strategies are designed to give slow-learning students the instruction they need to master the material being presented. Application of these techniques requires clear instructional objectives, breaking instruction into discrete units, assessing mastery before moving from one unit to another, and practice and corrective instruction. This strategy has been demonstrated repeatedly, and it does help slow-learning students master material. But it shows larger effects on tests made specifically for the study in question than on standardized achievement tests. The primary drawbacks of mastery learning are that it usually requires more instructional time than may be deemed feasible to allow for nearly all students to master the material presented, and that it may help slower students at the expense of students who can master material more quickly.

Cooperative learning methods cope with heterogeneity by creating classroom arrangements that provide incentives for progress or performance for all students. They do this by making use of improvement points, success in competitions between students of approximately equal ability, or similar methods. The essence of successful cooperative learning programs is *cooperative incentives* for learning. A variety of cooperative learning methods have been shown to be effective in increasing academic achievement for both disadvantaged and other students. In addition, cooperative learning methods have shown positive effects on race rela-

---

61 Bloom (1974).

62 Slavin (1983). Stallings and Stipek (1986) reviewed both mastery learning and cooperative learning research; Slavin (1987a) reviewed mastery learning research.

tions, liking for school, and self-esteem.[63] These noncognitive effects of cooperative learning methods are especially important because they suggest that the methods have potential for rearranging friendship patterns -- a potentially valuable tool in severing delinquent peer associations. Cooperative methods also appear to have the potential for harnessing peer groups as a source of restraint against individual misconduct because the groups have a stake in the comportment of each of their members. These prospects have not been evaluated.

Robert Slavin and Nancy Madden (1987) recently reviewed classroom programs to determine what principles underlie those that are effective for at-risk students in the elementary grades. The conclusion: "Consistently effective classroom programs accommodate instruction to individual needs while maximizing direct instruction, and they frequently assess student progress through a structured hierarchy of skills" (p. 25). A complete assessment of strategies and arrangements for assisting disadvantaged or slow-learning students to succeed in school is beyond my purpose here.[64] The important point is that clear progress is being made (a) in the development of a theoretical understanding of ways to arrange instruction in elementary schools that does not require the segregation of slow learners from other students and (b) in the technology required to deliver instruction that is beneficial and rewarding to more students. These developments imply the prospect of delivering well-articulated, well-designed, and effective instruction throughout the elementary years. Such a comprehensive program of intervention would not lead to levels of achievement for disadvantaged students that equal the levels achieved by more advantaged students, but there are now clear directions available for assisting students who are at elevated risk of school failure to display far more academic competency than is now typical.

---

63 Slavin (1983); Slavin and Madden (1987).

64 For useful reviews see Slavin and Madden (1987), Slavin (1987c), and Madden and Slavin (1983, 1987).

Harmful programs. Students who are poor performers in school present difficult problems of classroom management and instruction. A common approach to these problems, increasingly used until the passage of the Educational for All Handicapped Children Act of 1975, was to place slower students in separate classrooms. An argument for such placements is that instruction can be better tailored to the academic needs of the students, although the weight of this argument depends on the quality and efficacy of the services provided in special classes. Arguments against such placements include the possibility that the separate education provided may be inferior, the special education placement may stigmatize students, and reintegrating students into the mainstream classes later on is difficult.

Convincing evidence implies that even high quality special educational placements can be harmful. In one credible evaluation, students classified as educationally mentally retarded or emotionally disturbed were randomly assigned either to regular or high quality special classes.[65] Regular class placement was more beneficial to both groups of students than was special class placement. The results were especially impressive because they showed a cumulative disadvantage of special education placement compared to regular class placement over a three-year period from grade three to grade five. A review of educational programs for students with mild educational disadvantages by Nancy Madden and Robert Slavin showed few benefits of special education placement and relatively consistent evidence of the benefits of placement in regular classes.[66] The use of individual instruction, well-designed resource programs, and cooperative learning techniques is useful for enhancing the self-esteem, conduct, and achievement of mainstreamed students. It also increases their acceptance by other students.

---

65 Calhoun and Elliott (1977).

66 Madden and Slavin (1983).

Middle and Secondary School Programs

By middle or junior high school ages, problems of truancy and unmanageable student conduct become more difficult for schools to bear. In contrast to programs at the elementary level, which are usually perceived as having a focus on academic failure, programs more explicitly directed to coping with adolescent problem behavior have been attempted in middle and secondary schools. These programs are sometimes seen as dropout prevention programs, sometimes as delinquency programs, sometimes as attendance programs, drug prevention programs, or discipline programs. Some programs involve the assignment of students to special "alternative schools" believed to be in a better position to serve troublesome youths or believed to provide a socially responsible way to siphon off the troublemakers so that the regular schools can conduct their business.

I will illustrate the range of what has been tried in the way of delinquency prevention or treatment programs in schools for adolescents and what is known about the effects of these illustrative programs based on evaluations that are usually ambiguous. To do this I will discuss mainly programs with which my colleagues and I have been involved as evaluators or (occasionally) instigators. These programs fall into several categories: (a) alternative schools; (b) peer group interventions; (c) individually targeted interventions; (d) school improvement programs focused on discipline or instruction, or both; and (e) special classes or curriculum.

Alternative schools. The things called "alternative" schools are a variety of things indeed. I will describe two: (a) the Academy for Community Education that attempted to apply a behavioral approach to academics, discipline, and career development for students whom the public schools would rather do without, and (b) the Compton Action Alternative School that tried to provide a supportive and safe learning environment for youths who were in difficulty with the school system and the law.

The Academy for Community Education (ACE) was a small alternative school serving youths at high risk for delinquent behavior drawn from the Miami area public schools. It combined intensive basic skills training with a community-based vocational apprenticeship program. A "token economy" system was used to provide incentives for appropriate conduct and academic achievement. In such a system, students earn tokens that are exchanged for more concrete rewards on scheduled occasions. Although this program had a variety of interesting features, it was distinguished primarily by this behavioral approach to discipline and incentives for learning. An evaluation of this program[67] implied that it was successful in increasing the amount of academic credit its students earned and that participants may have attended school more regularly and persisted longer in school than a nonequivalent comparison group. No significant effects of the program on achievement tests were observed, but analyses did imply that ACE participants liked school less than comparison students, scored higher than non-ACE students on a measure of rebellious attitudes, and reported a greater variety of serious delinquent behavior.

The evaluation of this program had a number of shortcomings that stemmed from relatively small sample sizes, the lack of random assignment to treatment and control conditions, and attrition from the ACE program before the intended "dose" had been delivered. Despite these limitations, the evaluation implied that the program had created an orderly environment that may have been a little too strict. It illustrates a program model that -- with modification to make the school more pleasant and to retain more students in the program -- may have the potential to evolve into a useful alternative educational setting for troublesome youths. Despite its plausibility, at least from a behavioral perspective, the program serves primarily to illustrate the difficulty in implementing and evaluating an alternative school that ameliorates adolescent problem behavior and improves achievement. In its current form, this program model is not a solution to the problem of the segregation of academically less competent and troublesome students from the mainstream.

---

67 D. C. Gottfredson (1986a).

The Compton Action Alternative School (CAAS) took a different approach to providing schooling to adolescents who were troublesome and slow learners in school and highly delinquent according either to self-reports or arrest indicators.[68] The youths involved in this quasi-experiment were drawn from an area of extensive gang conflict, most were associated with a gang, and relatively few lived in intact families. The program's implementers applied what they called "personalized education," with affective, behavioral, and scholastic aims. The range and intensity of personal interaction between students and teachers was far greater than that typical of most public schools, especially for students like those involved in CAAS. Although the program had other distinctive features -- including a sensible instructional approach, a broadened range of rewards for students, paid work roles for students in the maintenance of the school, and parent activities -- it is probably this personal interaction that was most distinctive about the program.

Youths were randomly assigned to CAAS or a control group in batches, with unequal probabilities of assignment in each batch. Checks showed that the treatment and control group were not equivalent, making it necessary to use complicated statistical procedures to discern whether outcome differences were due to program participation or to pre-existing differences between the groups.

If one could have complete confidence in the results, they would imply that this was a remarkably effective program that altered a number of student risk factors for delinquency and reduced drug involvement among members of the treatment group. More specifically, after making statistical adjustments, CAAS participants thought of themselves as more able, perceived their parents as emphasizing education more, had higher educational expectations, more attachment to school, more belief in conventional social rules, more positive self-concepts, less rebellious attitudes, spent more effort on school work, worked more, and used fewer drugs according to self-report than did the control group. No significant difference was found between the two groups in self-reported variety of delin-

---

68 An evaluation was reported by Gottfredson (1986).

quent behavior or on a measure of delinquent behavior based on arrest records.

Several features make the CAAS quasi-experiment grounds for experimental replication rather than for crime policy. The evaluation was based on small samples, it examined only one realization of the program, there is only spotty information about the actual day-to-day operation of the program, and there is reason to question the validity of the self-report measures of delinquency and drug use for this sample.

There is no evidence that the CAAS program did any harm, and the preponderance of the evidence suggests that it was beneficial. After making statistical adjustments for pre-existing differences between the treatment and comparison group, there were no differences between the groups in days in school, absences, grades, suspensions, expulsions, or grade-to-grade promotions. This alternative school seems to have been a placement for troublesome students that they liked better than they would have liked regular school.

Alternative schools vary in their nature, student composition, structure, and purpose. There is not yet a cumulative body of scientific evidence about their effects. Because school systems, especially urban school systems, often feel compelled to provide such alternatives for unruly adolescents, the development of such knowledge is important. School systems implementing such programs have an ethical obligation to assess the efficacy and potential unintended consequences of their alternative schools.

Peer group interventions. Peer group interventions to reduce the risk of delinquent behavior are suggested by the observation that youths who engage in delinquent behavior tend to have delinquent friends. One kind of peer group intervention is derived from Guided-Group Interaction (GGI).[69] GGI aims to develop a group using free discussion in an open atmosphere and assumes delinquents must learn to conform to conventional rules by gaining more social

---

69 Bixby and McCorkle (1951), Vorrath and Brendtro (1974).

rewards through conformity than through nonconformity. Derivatives of GGI, known as Peer Group Counseling, Peer Culture Development, or Positive Peer Culture have received widespread application in schools. In some cases, enthusiastic claims have been made for the efficacy of these programs in reducing delinquent behavior. The evaluations of school-based peer group interventions involving GGI-like techniques have often been flawed, and those claiming to have shown positive effects are possibly misleading.[70]

In at least one reasonably sound evaluation, the peer group intervention may have increased rather than decreased the delinquent behavior of participating adolescents. There is no credible or consistent evidence that such peer group interventions are beneficial, and there is some evidence that they occasionally have unintended negative effects. Such programs should be applied only in the context of careful experimentation involving clear hypotheses about ways to improve the efficacy and beneficial nature of the intervention. In contemplating future interventions based on the rationale that peer group norms foster delinquent behavior, it may be useful to seek ways to avoid delinquent peer interaction entirely rather than to attempt to modify its nature.

Individually targeted interventions. Unlike elementary schools where students usually have a single classroom teacher for most of the school day, middle and secondary schools provide a more complex environment for students in which no identifiable teacher may have overall responsibility for the education of a student. A student can fall through the cracks in these schools. Denise Gottfredson recently reported on an experiment in which "marginal" students -- the 10% of students whose school records indicated the greatest academic and behavioral problems -- received special services from a school specialist with responsibility for identifying their needs and helping to arrange to have those needs met in the school and the home.[71] Program implementers sought to improve student self-

---

70 Gottfredson (1987) reviewed this literature.

71 D. C. Gottfredson (1986b).

esteem and attachment to school, as well as to reduce the risk of school failure and delinquency.

In a diagnostic phase, specialists used detailed information about students' performance on achievement and competency tests, school grades, and disciplinary difficulties to specify behavioral treatment objectives and to develop academic, counseling, and advocacy services directed at these objectives. For example, specialists engaged in direct tutoring and interacted with parents or teachers to get their assistance in implementing behavioral plans for students. Standards for the quality and frequency of contact with students were established and monitored.

A large-sample true experiment (with random assignment) was used to evaluate the intervention; differences observed between the treatment and control groups were likely to have been due to the intervention, and the sample sizes were large enough that educationally meaningful differences would likely to be detected by the statistical tests applied. The intervention increased the percentage of twelfth-grade participants who graduated from 42% to 76%, increased the percentage of students in lower grades who were promoted to the next grade slightly (but not dependably each year), and it increased performance on standardized achievement tests slightly. Evidence also implied that the intervention increased treatment students' drug use according to a self-report measure in one of seven schools implementing the program.

Despite some positive effects of the program, it did not produce all of the objectives sought. As Denise Gottfredson put it,

> "The [intervention] was not successful at improving student self-concepts, attachment to school, or at decreasing delinquent behavior among the targeted students. It failed to reach its objectives in part because the quality of services varied considerably from school to school. Target students in the only school that implemented the student services up to the intensity standards engaged in significantly less delinquent behavior during the 1981-82 school year. . . .

> [The application of what for a typical school system are] intensive services to marginal students appears not to have reduced delinquent behavior, at least not in the short run. (pp. 727-728)

This targeted intervention which was costly and probably exceeds the resources that a typical school system is likely to devote to such a program had detectable beneficial effects, but with the exception of graduation rates for twelfth-graders they were small.

School improvement programs. Problems of academic failure and adolescent problem behavior are not randomly distributed across schools; some schools experience much higher rates of these problems than do others. There is evidence that rates of disorder and academic failure are not due solely to the demographic composition of schools but also to their climates and practices.[72] Schools with clear, fair, firm rule enforcement -- and schools with a climate that emphasizes and rewards good academic performance -- are usually more orderly and appear to do a better job of restraining students from misconduct.

This evidence suggests that interventions in disorderly schools to improve school climates and disciplinary practices may be helpful. Such interventions are most needed in urban schools with much disorder. The national evaluators of Follow Through correctly described a problem that school improvement programs will face:[73]

> The organization and operation of a big city school system may pose a major problem for the implementation of new educational approaches. Characteristics of large city systems which are either not present or are present to a lesser extent in other cities and which may make the delivery of a . . . program difficult include high teacher turn-

---

72 Gottfredson and D. C. Gottfredson (1985), Rutter, Maughan, Mortimore, and Ouston (1979).

73 Stebbins et al. (1977, Vol. A, p. 150).

over, teacher strikes, formal negotiations over teacher contracts and the bureaucracy generally associated with large school systems.

Some experience implies that schools differ in their amenability to school improvement or organization development interventions.[74] Such things as high morale, a spirit of collaboration and open communication among faculty and administrators, and the lack of a history of failed innovation all make it easier to implement changes or improvements in schools. It is in the most disorderly, demoralized schools that most need school improvement programs that the same conditions that make education difficult and unpleasant make it hard for organization development workers or school personnel to implement innovations.

Nevertheless, there are examples of school improvement programs that have been implemented in extremely difficult schools. In one example, Denise Gottfredson and her colleagues used a specific, structured organizational development approach to improve discipline in a middle school serving an inner-city, predominantly black community.[75] Census data showed that the school's catchment area was characterized by a high percentage of female-headed households, persons in low status occupations, and families below the poverty level. A school climate survey showed that teachers were victimized at a rate higher than 95% of the schools in the norming sample for the survey, and that teacher morale was low. The same survey showed tension and mistrust between faculty and administrators, high levels of classroom disorder, and frequent punishment of students.

---

74 See Gottfredson and D. C. Gottfredson (1987); Fullan, Miles, and Taylor (1980).

75 An evaluation of this program is reported by D. C. Gottfredson (1988); the structured organizational development approach is described by Gottfredson (1984) and Gottfredson and D. C. Gottfredson (1987).

The intervention involved composing teams of teachers, administrators and other staff to identify and overcome obstacles to the implementation of several innovations aimed at increasing school orderliness and students' chances for success. Few obstacles were overcome on the first try, but the team sought to learn why their plans were not working and to renew their efforts. By the third year of the project, the teams had implemented improved classroom management and instructional procedures, revised school-wide discipline polices and practices, and implemented several innovations to increase parent involvement and decrease student alienation.

An evaluation showed that the school as a whole became safer and the classrooms more orderly over the course of the project according to survey data that paralleled the data used earlier to diagnose problems. Students' self-reported delinquent behavior also declined significantly, and the improvement in student behavior was accompanied by significant improvements in student attitudes and experiences. The most dramatic improvements were on the survey measures of organizational health. Teacher morale rose dramatically, and teacher reports of planning and action in the school also rose; teachers' perceptions of the administration became much more positive.

One might argue that the something other than the organization development intervention brought about these improvements in the school. But there were no major changes in the school's demographic composition, and the school had the same principal throughout the project. Although some unknown influence or artifact is a possible explanation, the most likely explanation for the improvement is that the structured intervention worked to implement improved school practices. The school environment became more *competent* in regulating student behavior.

Another example of an effective school improvement intervention is a school-based delinquency prevention program in seven Charleston middle and high schools (with control schools in the same school district). This program brought about a small but measurable reduction in delinquent behavior and misconduct. Students in participating schools were suspended less often, reported

fewer punishing experiences in school, and less involvement in delinquent and drug-related activities than students in comparison schools.[76] This project used a structured approach to school improvement; a team framework for managing innovation; a policy review and revision component aimed at instruction, classroom management, and discipline; and school-wide academic and school climate innovations. The evaluation was limited in the information it produced about which aspects of the program were most important, and delinquency data from official records would have been valuable supplements to the school records and self-reports used.

Carefully studied school improvement programs with measurable effects on adolescent problem behavior are in short supply. On the basis of the available evidence, such programs show promise in coping with some multiple problems faced by many urban schools. These interventions are time and talent intensive, and they are harder to apply in the schools that need them most.

Special classes or curriculum. Middle and secondary schools divide up their school days into classes, and it is class attendance that occupies most student time in school. It may seem natural for schools to use the vehicle of its classes and curriculum to apply an educational intervention that is helpful in reducing problem behavior.

A program run in Pasadena (California) schools altered the curriculum and teaching strategies in a combined English and social studies program and produced results that look promising.[77] The curriculum was highly structured and included segments on coping with authority, responsibility, family problems, and the justice system. It used a two-hour block of time, making possible field-work activities, community work, and other engaging activities. The quasi-

---

76 D. C. Gottfredson (1986b). For other school improvement interventions with positive results see D. C. Gottfredson and Cook (1986a).

77 D. C. Gottfredson and Cook (1986b).

experimental evaluation of this program showed increases in attachment to school and academic success, and it showed decreases in delinquent behavior according to self-reports. Whether a replication would show the same results is not known.

Experiments with high quality classroom-based curriculum and instruction have some plausibility. More evidence about their effects -- and information about the ways instructional design and delivery in middle and high schools affects risk factors for adolescent problem behavior -- is needed.

What Could be Done?

The record of accomplishment and the state of cumulative knowledge about education and delinquency suggests several propositions:

1. Adolescent problem behavior is a stable phenomenon, and it is unlikely that *any* short-duration intervention will greatly influence the frequency or extent of delinquent behavior (or greatly improve academic performance) long after the intervention has ended.

2. Carefully designed and implemented educational interventions in the preschool years, in the elementary grades, and in secondary schools show beneficial outcomes -- at least for a while.

3. Structured methods of school improvement have potential for improving schools by helping them put better instructional, classroom management, and disciplinary practices in place.

4. Intensive, high quality educational and behavioral programs applied early and continuing throughout the entire school career of youths at high risk of educational failure and other problem behaviors would likely produce substantial reduc-

tions in school misconduct and delinquency and substantial improvements in learning and school completion. The effects of such programs may be cumulative.

5. The fade-out effects typically observed for early educational interventions are to be expected, and longer-term benefits sometimes observed may be due in part to improvements in the educational treatments or environments to which program participants were exposed later in their school careers.

6. Some practices common in American education -- special education assignments, pull-out programs, grouping troublesome students together -- may typically do more harm than good for the individuals exposed to them (despite any value they have in making instruction easier in classrooms from which the individuals are removed).

The first proposition is especially important. The enduring nature of individual differences associated with slow progress in school and troublesome conduct implies, as Alan Kazdin has suggested,[78] that it is incorrect to conceptualize the task of intervention as a time-limited one. Long-term management of behavioral and educational difficulties is also implied by the enduring nature of the family, community, and peer-group environments that youths inhabit. These continuing environmental influences combine with differences in abilities and personal dispositions to produce regularity in behavior. The idea that long-term educational and behavioral *management* is required to restrain high risk youths from misconduct and facilitate their educational development is a departure from the ideas underlying the Head Start programs and delinquency prevention programs more generally. Early intervention to ameliorate disadvantage is useful, but early intervention combined with continuing intervention may be required.

---

78 Kazdin (1987).

Continuing management of behavior will require attention to the environmental influences of school at all points in educational careers. This management perspective seems more realistic that the search for one-shot interventions, and it is likely to be more productive in the long run. This management perspective implies that changes to increase the competency of educational *environments* is required -- involving changes in the management of student conduct and learning. Among such changes might be reductions in the use of extended periods of "in-school" as well as out-of-school suspensions that disrupt the continuity of instruction for students having difficulty adapting to classroom environments, extending the period of time allowed for subject matter mastery beyond nine months for students who do not achieve criterion performance in that period of time, and composing groups for cross-age or cross-grade instruction as an additional way of coping with student heterogeneity. Applying this perspective will require a commitment to the education of all but a very small fraction of students, not just the students whom schools now find it easiest to serve.

An obvious feature of American education is the segregation of students by socioeconomic status and race. This segregation is today largely a result of residential segregation, and it results from a mix of social policies and individual choices that promote such segregation. A consequence is that entire student populations are at elevated risk of failure and delinquent behavior, and that the schools that serve these populations are often demoralized organizations that are difficult to improve. Demoralized and disorderly schools are perceived as such, and these perceptions join with other stereotypes in further exacerbating problems of residential and school segregation and contribute to a downward spiral of demoralization and disorder. Anything that can be done to interrupt this spiral is likely to be helpful.

Some Opportunities to Improve American Education

From time to time, promising opportunities arise. The War on Poverty era provided such opportunities, and one useful product of the legislation enacted was that it allowed the assessment of the effects of some of the social programs then begun. In recent years, there has been much less political emphasis on solving large problems, and there has been even less interest in programmatic efforts to devise solutions.

An opportunity to do some good through legislation is now before us. There is little question that the $3.9 billion or so to be spent on Chapter I programs under the Education Consolidation and Improvement Act now being considered in the Senate will not be spent as effectively on compensatory education as it might be.[79] The current structure of Chapter I -- whether intended or not -- encourages school systems to apply interventions that are easily recognized as targeted at disadvantaged students. Pull-out programs are easily recognized as targeted; programs to improve the school or apply classroom instructional practices that benefit disadvantaged students are not so easily recognized. It is important that the new legislation remove this barrier to more effective educational practices. In addition, the fraction of Chapter I money now spent on the evaluation of the program is not well spent. As Robert Slavin has pointed out, most of the programs known to be effective for disadvantaged students are old -- developed in the 1960's and early 1970's when federal money was spent for program development. If only 1 penny on the dollar were spent for long-term research and development programs, that would be $39 million a year spent to develop career-long educational programs that are required to improve American education for high risk youths. Such a research and development program would almost surely be more productive than the current Chapter I evaluations.

---

79 Slavin (1987b).

Improvements in American education would also come about if we could somehow induce school systems to use more of the knowledge we already have about effective and ineffective practices. Avoid special education placement outside of the mainstream classrooms when possible, use more effective rather than less effective pull-out programs where such programs are used, use cooperative learning and direct instruction programs, apply cross-age strategies for reading instruction rather than retaining students in grade or allowing slow learners to fall further behind when instruction is at too-high a level, ensure that school rules are fair and clear and *actually followed* by disciplinarians in the school, use classroom management practices that preserve time for instruction, and make better use of the home in managing student behavior. Nearly everywhere in American education insufficient attention is given to standards for the implementation of instruction and classroom management. Staff development and the supervision of instruction are often far too ineffectual to be expected to make a substantial difference in how instruction is conducted.

Improvements at the school level are possible. Structured school improvement interventions appear to have utility in bringing about beneficial changes even in the most disorderly schools, and there is a great deal of knowledge about educational technologies that are not now fully used that can provide the content for school improvement efforts. Public education in America is not now as good as it can be for several reasons: lack of financial resources, lack of talent, and the lack of a commitment to make the schools work for everyone. Today, diminished commitment to make the schools work for more students contributes to the lack of talent and resources.

References

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radosevich, N. (1979). Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review, 44*, 636-655.

Alexander, J. F., & Parsons, B. V. (1973). Short-term behavioral intervention with delinquent families: Impacts on family process and recidivism. *Journal of Abnormal Psychology, 81*, 219-225.

Anastasi, A. (1968). *Psychological testing* (3rd ed.). New York: Macmillan.

Atkeson, B. M., & Forehand, R. (1979). Home-based reinforcement programs designed to modify classroom behavior: A review and methodological evaluation. *Psychological Bulletin, 86*, 1298-1308.

Bachman, J. G., & O'Malley, P. M., & Johnston, J. (1978). *Adolescence to adulthood: Change and stability in the lives of young men*. Ann Arbor, MI: Institute for Social Research.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.

Baum, C. G., & Forehand, R. (1981). Long-term follow-up assessment of parent training by use of multiple outcome measures. *Behavior Therapy, 12*, 643-652.

Becker, W. C., & Carnine, D. W. (1981). Direct instruction: A behaviorally based model for comprehensive educational intervention with the disadvantaged. In A. Kazdin & B. Lahey (Eds.), *Contributions of behavior modification to education* (pp. 429-473). Hillsdale, NJ: Erlbaum.

Bereiter, C., & Englemann, S. (1966). *Teaching disadvantaged children in the preschool*. Englewood Cliffs, NJ: Prentice-Hall.

Berrueta-Clement, J. R., Schweinhart, L. J., Barnett, W. S., Epstein, A. S., & Weikart, D. P. (1984). *Changed lives: The effects of the Perry Preschool Program on youths through age 19*. Ypsilanti, MI: High/Scope Press.

Bixby, F. L., & McCorkle, L. W. (1951). Guided group interaction and correctional work. *American Sociological Review, 16*, 455-459.

Block, J. (1971). *Lives through time*. Berkeley, CA: Bancroft.

Block, R. (1979). Community, environment, and violent crime. *Criminology, 17*, 46-57.

Bloom, B. (1974). An introduction to mastery learning theory. In J. H. Block (Ed.), *Schools, society, and mastery learning*. New York: Holt.

Calhoun, G., & Elliott, R. (1977). Self-concept and academic achievement of educable retarded and emotionally disturbed pupils. *Exceptional Children, 44*, 379-380.

Cohill, M. B., Jr. (1985). The family and delinquency: A judicial perspective. *Today's Delinquent, 4*, 47-53.

Craig, M. M., & Glick, S. J. (1963). Ten years experience with the Glueck Social Prediction Table. *Crime and Delinquency, 9*, 249-261.

Dixon, M. C., & Wright, W. E. (1974). *Juvenile delinquency prevention programs: An evaluation of policy related research on the effectiveness of prevention programs*. Nashville, TN: Office of Educational Services, Peabody College for Teachers.

Empey, L. T. (1985). The family and delinquency. *Today's Delinquent, 4*, 5-46.

Empey, L. T., & Erikson, M. L. (1972). *The Provo experiment: Evaluating community control of delinquency*. Lexington, MA: Lexington.

Empey, L. T., & Lubeck, S. G. (1971). *The Silverlake experiment: Testing delinquency theory and community interventions*. Chicago: Aldine.

Farnworth, M., Schweinhart, L. J., & Berrueta-Clement, J. R. (1985). Preschool intervention, school success and delinquency in a high-risk sample of youth. *American Educational Research Journal, 22*, 445-464.

Featherman, D. L., & Hauser, R. M. (1978). *Opportunity and change*. New York: Academic Press.

Finn, C. E., Jr. (1987). The high school dropout puzzle. *Public Interest, 87* (Spring), 3-22.

Fleischman, M. J., & Szykula, S. A. (1981). A community setting replication of a social learning treatment for aggressive children. *Behavior Therapy, 12*, 115-122.

Fullan, M., Miles, M., & Taylor, G. (1980). Organization development in schools: The state of the art. *Review of Educational Research, 50*, 121-184.

Glueck, S., & Glueck, E. T. (1950). *Unraveling juvenile delinquency*. Cambridge, MA: Harvard University Press.

Gottfredson, D. C. (1982). Personality and persistence in education: A longitudinal study. *Journal of Personality and Social Psychology, 43*, 532-545.

Gottfredson, D. C. (1986a). Academy for Community Education: Final report. Unpublished manuscript, Center for Social Organization of Schools, Johns Hopkins University.

Gottfredson, D. C. (1986b). An empirical test of school-based environmental and individual interventions to reduce the risk of delinquent behavior. *Criminology, 24*, 705-731.

Gottfredson, D. C. (1988). An evaluation of an organization development approach to reducing school disorder. *Evaluation Review, 11*, 739-763.

Gottfredson, D. C., & Cook, M. S. (1986a). A test of a school-based program to reduce delinquency by increasing social integration: The Milwood Alternative Education Project. Unpublished manuscript, Johns Hopkins University, Center for Social Organization of Schools.

Gottfredson, D. C., & Cook, M. S. (1986b). Increasing school relevance and student decisionmaking: Effective strategies for reducing delinquency? Unpublished manuscript, Johns Hopkins University, Center for Social Organization of Schools.

Gottfredson, G. D. (1981). Schooling and delinquency. In S. E. Martin, L. B. Sechrest, & R. Redner (Eds.), *New directions in the rehabilitation of criminal offenders* (pp. 424-469). Washington, DC: National Academy Press.

Gottfredson, G. D. (1982). *Role models, bonding, and delinquency: An examination of competing perspectives* (Report No. 331). Baltimore: Johns Hopkins University, Center for Social Organization of Schools. (ERIC ED 230 888)

Gottfredson, G. D. (1984). A theory-ridden approach to program evaluation: A method for stimulating researcher-implementer collaboration. *American Psychologist, 39*, 1101-1112.

Gottfredson, G. D. (1985). *The Effective School Battery: User's manual.* Odessa, FL: Psychological Assessment Resources.

Gottfredson, G. D. (1986). Compton Action Alternative School: Final report. Unpublished manuscript, Johns Hopkins University, Center for Social Organization of Schools.

Gottfredson, G. D. (1987). Peer group interventions to reduce the risk of delinquent behavior: A selective review and a new evaluation. *Criminology, 25*, 1001-1043.

Gottfredson, G. D., & Gottfredson, D. C. (1985). *Victimization in schools.* New York: Plenum.

Gottfredson, G. D., & Gottfredson, D. C. (1987). *Using organization development to improve school climate* (Report No. 17). Baltimore: Center for Research on Elementary and Middle Schools, Johns Hopkins University.

Gottfredson, G. D., Gottfredson, D. C., & Cook, M. S. (1983). *The School Action Effectiveness Study: Second interim report* (Report No. 342). Baltimore: Johns Hopkins University, Center for Social Organization of Schools. (ERIC ED 237 892)

Hansen, J.-I., & Campbell, D. P. (1985). *Manual for the SVIB-SCII Strong-Campbell Interest Inventory, Form T325 of the Strong Vocational Interest Blank*. Stanford, CA: Stanford University Press.

Hindelang, M. J. (1973). Causes of delinquency: A partial replication and extension. *Social Problems, 20*, 471-487.

Hindelang, M. J., Hirschi, T., & Weis, J. G. (1981). *Measuring delinquency*. Beverly Hills: Sage.

Hirschi, T. (1969). *Causes of delinquency*. Berkeley, CA: University of California Press.

Hirschi, T. (1983). Crime and the family. In J. Q. Wilson (Ed.), *Crime and public policy* (pp. 53-68, 297-299). San Francisco: ICS Press.

Hirschi, T. (1983). Families and crime. *Wilson Quarterly, 7*, 132-139.

Hirschi, T., & Gottfredson, M. R. (1983). Age and the explanation of crime. *American Journal of Sociology, 89*, 552-584.

Hirschi, T., & Hindelang, M. J. (1977). Intelligence and delinquency: A revisionist review. *American Sociological Review, 42*, 571-587.

Huesmann, L. R., Eron, L. D., Lefkowitz, M. M., & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology, 20*, 1120-1134.

Jessor, R., Ceraves, T. D., Hanson, R. C., & Jessor, S. L. (1968). *Society, personality, and deviant behavior: A study of a tri-ethnic community*. New York: Holt, Rinehart, and Winston.

Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.

Kazdin, A. E. (1985). *Treatment of antisocial behavior in children and adolescents*. Homewood, IL: Dorsey.

Kazdin, A. E. (1987). Treatment of antisocial behavior in children: Current status and future direction. *Psychological Bulletin, 102*, 187-203.

Kellam, S. G., Branch, J. D., Agrawal, K. C., & Ensminger, M. E. (1975). *Mental health and going to school.* Chicago: University of Chicago Press.

Kellam, S. G., & Brown, C. H. (1982). Social adaptational and psychological antecedents in first grade of adolescent psychopathology ten years later. Paper presented at the Research Workshop on Preventive Aspects of Suicide and Affective Disorders Among Adolescents and Young Adults, Harvard School of Public Health, Boston, MA.

Kelley, F. J., & Veldman, D. J. (1964). Delinquency and school dropout behavior as a function of impulsivity and nondominant values. *Journal of Abnormal and Social Psychology, 69,* 190-194.

Kennedy, M. (1978). Findings from the Follow Through planned variation study. *Educational Researcher, 7,* 3-11.

Lambert, N., Bower, E., & Hartsough, C. (undated). Process for the assessment of effective student functioning (Technical Report). Monterey, CA: Publishers Test Service of CTB/McGraw-Hill.

Lazar, I., Darlington, R., Murray, H., Royce, J., & Snipper, A. (1982). Lasting effects of early education: A report from the consortium for longitudinal studies. *Monographs of the Society for Research in Child Development,* Serial No. 195, Vol. 47, Nos. 2-3.

Lefkowitz, M. M. (1968). Nonintellective components in the school performance of juvenile delinquents. *Perceptual and Motor Skills, 26,* 1185-1186.

Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53,* 1431-1446.

Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin, 94,* 68-99.

McCall, R. B., Appelbaum, M. I., & Hogarty, P. S. (1973). Developmental changes in mental performance. *Monographs of the Society for Research in Child Development, 38* (2, Serial No. 151).

McCord, W., McCord, J., & Zola, I. K. (1959). *Origins of crime.* New York: Columbia University Press.

McDermott, D. (1984). The relationship of parental drug use and parents' attitude concerning adolescent drug use to adolescent drug use. *Adolescence, 19,* 89-97.

McDill, E. L., Natriello, G., & Pallas, A. M. (1986). A population at risk: Potential consequences of tougher standards for student dropouts. *American Journal of Education, 94,* 135-181.

McKay, H., Sinisterra, L., McKay, A., Gomez, H., & Lloreda, P. (1978). Improving cognitive ability in chronically deprived children. *Science, 200*, 270-278.

McKay, R. H., Condelli, L., Ganson, H., Barrett, B. J., McConkey, C., & Plantz, M. C. (1985). The impact of Head Start on children, families, and communities (Final report of the Head Start Evaluation, Synthesis and Utilization Project). Washington, DC: CSR, Inc.

Madden, N. A., & Slavin, R. E. (1983). Mainstreaming students with mild handicaps: Academic and social outcomes. *Review of Educational Research, 53*, 519-569.

Madden, N. A., & Slavin, R. E. (1987). *Effective pull-out programs for students at risk* (Report No. 20). Baltimore: Johns Hopkins University, Center for Research on Elementary and Middle Schools.

Martin, S. E., Sechrest, L. B., & Redner, R. (Eds.). (1981). *New directions in the rehabilitation of criminal offenders* (Report of the Panel on Research on Rehabilitative Techniques, National Research Council). Washington, DC: National Academy Press.

Meyer, L. A. (1984). Long-term academic effects of the direct instruction Project Follow Through. *Elementary School Journal, 84*, 380-394.

National School Resource Network. (1980). *Peer Culture Development* (Technical Assistance Bulletin 28). Washington, DC: Author.

Natriello, G., McDill, E. L., & Pallas, A. (1987). In our lifetime: Schooling and the disadvantaged. Paper prepared for the Committee for Economic Development, Department of Sociology, Johns Hopkins University.

Olweus, D. (1979). Stability of aggressive reaction patterns in males: A review. *Psychological Bulletin, 86*, 852-875.

Pallas, A. M. (1986). School dropouts in the United States. In J. D. Stern & M. F. Williams (Eds.), *The condition of education*. Washington, DC: U.S. Government Printing Office.

Patterson, G. R. (1982). *Coercive family process*. Eugene, OR: Castalia.

Patterson, G. R. (1986). Performance models for antisocial boys. *American Psychologist, 41*, 432-444.

Reid, J. B., & Patterson, G. R. (1976). The modification of aggression and stealing behavior of boys in the home setting. In E. Ribes-Inesta & A. Bandura (Eds.), *Analysis of delinquency and aggression* (pp. 123-145). Hillsdale, NJ: Erlbaum.

Roberts, A. H., Erikson, R. V., Riddle, M., & Bacon, J. G. (1974). Demographic variables, base rates, and personality characteristics associated with recidivism

in male delinquents. *Journal of Consulting and Clinical Psychology, 42*, 833-841.

Robins, L. N. (1966). *Deviant children grown up.* Baltimore: Williams & Wilkins.

Robins, L. N. (1978). Sturdy childhood predictors of adult antisocial behavior: Replications from longitudinal studies. *Psychological Medicine, 8*, 611-622.

Robins, L. N., & Hill, S. Y. (1966). Assessing the contribution of family structure, class and peer groups to juvenile delinquency. *Journal of Criminal Law, Criminology, and Police Science, 57*, 325-334.

Robins, L., West, P., Ratcliff, K., & Herjanic, B. (1978). Father's alcoholism and children's outcomes. In F. A. Seixas (Ed.), *Currents in alcoholism* (Vol. 4, pp. 313-327). New York: Grune & Stratton.

Rutter, M., Maughan, B., Mortimore, P., & Ouston, J. (1979). *Fifteen thousand hours: Secondary schools and their effects on children.* Cambridge, MA: Harvard University Press.

Schmidt, F. L., & Hunter, J. E. (1981). Employment testing: Old theories and new research findings. *American Psychologist, 36*, 1128-1137.

Schweinhart, L. J., Weikart, D. P., & Larner, M. B. (1986). Consequences of three preschool curriculum models through age 15. *Early Childhood Research Quarterly, 1*, 15-45.

Sechrest, L., White, S. O., & Brown, E. D. (Eds.). (1979). *The rehabilitation of criminal offenders: Problems and prospects* (Report of the Panel on Research on Rehabilitative Techniques, National Research Council). Washington, DC: National Academy of Sciences.

Shannon, L. W. (1982). Assessing the relationship of adult criminal careers to juvenile careers. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Shaw, C. R., & McKay, H. D. (1969). *Juvenile delinquency in urban areas.* Chicago: University of Chicago Press.

Slavin, R. E. (1983). *Cooperative learning.* New York: Longman.

Slavin, R. E. (1987a). Mastery learning reconsidered. *Review of Educational Research, 57*, 175-213.

Slavin, R. E. (1987b). Making Chapter I make a difference. *Phi Delta Kappan, 57*, 110-119.

Slavin, R. E. (1987c). Ability grouping and student achievement in elementary schools: A best-evidence synthesis. *Review of Educational Research, 57*, 293-336.

Slavin, R. E., & Madden, N. A. (1987). *Effective classroom programs for students at risk* (Report No. 19). Baltimore: Center for Research on Elementary and Middle Schools, Johns Hopkins University.

Spivack, G., & Cianci, N. (1987). High-risk early behavior pattern and later delinquency. In J. D. Burchard & S. N. Burchard (Eds.), *Prevention of delinquent behavior* (pp. 44-74). Beverly Hills: Sage.

Spivack, G., & Rapsher, L. (1979). Special classes and being left back in school as elements in a high risk delinquency history. Philadelphia: Department of Mental Health Sciences, Hahneman Medical College and Hospital.

Stallings, J. A., & Stipek, D. (1986). Research on early childhood and elementary school teaching programs. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 727-753). New York: McMillan.

Stebbins, L. B., St. Pierre, R. G., Proper, E. C., Anderson, R. B., & Cerva, T. R. (1977). Education as experimentation: A planned variation model. Volume IV-A through IV-D: An evaluation of Follow Through. Cambridge, MA: Abt Associates.

Toby, J. (1983). Crime in the schools. In J. Q. Wilson (Ed.), *Crime and public policy*. San Francisco: ICS Press.

Vorrath, H. H., & Brendtro, L. K. (1974). *Positive peer culture*. Chicago: Aldine.

Weeks, H. A. (1958). *Youthful offenders at Highfields: An evaluation of the effects of the short-term treatment of delinquent boys*. Ann Arbor: University of Michigan Press.

Weikart, D. P., Epstein, A. S., Schweinhart, L., & Bond, J. T. (1978). *The Ypsilanti Preschool Curriculum Demonstration Project: Preschool years and longitudinal results*. Ypsilanti, MI: High/Scope.

Werner, E. E. (1987). Vulnerability and resiliency in children at risk for delinquency: A longitudinal study from birth to adulthood. In J. D. Burchard & S. N. Burchard (Eds.), *Prevention of delinquent behavior* (pp. 16-43). Beverly Hills: Sage.

West, D. J., & Farrington, D. P. (1975). *Who becomes delinquent*? London: Heinemann. West, M. O., & Prinz, R. J. (1987). Parental alcoholism and childhood psychopathology. *Psychological Bulletin, 102*, 204-218.

Wilson, J. Q., & Herrnstein, R. J. (1985). *Crime and human nature*. New York: Simon and Schuster.

Wolfgang, M. E., Figlio, R., & Sellin, T. (1972). *Delinquency in a birth cohort*. Chicago: University of Chicago Press.